CHANGES IN KANSAS INCOME SINCE 1900

by

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CHAPTER I

INTRODUCTION TO STATE INCOME ESTIMATES

HISTORICAL DEVELOPMENT

Estimates of income by states--with the exception of two pioneering works in the mid-nineteenth century--are a development of the last thirty-five years. Since they were a natural outgrowth of national income estimates, a brief outline of the major developments in this field precedes the discussion of state estimates. Very little had been accomplished in the area of national income statistics when Willford I. King began his intensive study late in 1913. In his first book on the subject, The Wealth and Income of the People of the United States (1915), King stated categorically that it was absolutely impossible--from the sources then available--to construct a technically accurate statistical answer to the questions concerning which the thinking public wished information. He described his own effort as intended to give an "impressionistic" picture and to convey a correct idea as to the general supply and distribution of wealth and income.[1] This study covered the census years 1850-1910. His estimates included total income and the amount produced by the various industries, its distribution among the factors of production, the share of corporations in the total national product, and the distribution of income among families.

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[1] Willford I. King, The Wealth and Income of the People of the United States, pp. ix-x.

During World War I, several estimates of national income were hastily constructed by men who were interested in the financial policy of the government. These were based either directly or indirectly on Mr. King's figures for 1910 and varied considerably in their results. The National Bureau of Economic Research, Incorporated, was chartered in 1920 to conduct quantitative, impartial investigations into subjects which affected public welfare. Sensing the need for further research in this area, the Bureau chose the topic of national income for its first investigation. In its first estimates, the Bureau used two independent sources of data and two investigators working independently. Mr. King—using data which showed income produced, such as statistics of coal and metals mined, lumber cut, crops grown, raw materials transported or manufactured, and the like—compiled estimates by sources of production. Mr. Oswald W. Knauth—using income tax returns, reports on wages and salaries, investigations of the profits of farmers, and so forth—made his estimates on the basis of incomes received. King's estimates covered the years 1909-1918, while Knauth's were for 1910 through 1919. For the nine years covered by both series, the two estimates were remarkable in their agreement. The average national income, estimated by sources of production, was 40.2 billions; by incomes received, it was 39.7 billions of dollars. The maximum difference in any one year was 6.9 per cent in 1913. In two years, 1911 and 1917, the estimates agreed to the hearest hundreds of millions. On a per capita basis, the maximum difference was only $24 per annum.[2]

As a by-product of his contribution to the study, Income in the

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[2] National Bureau of Economic Research, Income in the United States, Vol. I, pp. v-x, 1-13.

United States, Knauth also made an estimate of the distribution of income by states in the year 1919.[3] Surprisingly enough, Knauth's estimates—although having the distinction of being the first on a state basis in the present century—were preceded by those of George Tucker and Ezra C. Seaman who had made estimates of income for each of the states organized by 1840. Tucker's estimates were published in a series of articles entitled, "Progress of Population and Wealth in the United States in 50 Years," Merchants' Magazine, Volume IX, pp. 43-58; 136-144; 220-343. Seaman's book was entitled, Essays on the Progress of Nations (1852).[4] After these pioneering works, interest in state or regional estimates lagged for decades. Donald S. Murray suggests three principal reasons why state estimates did not develop as might have been expected after this auspicious start:

(a) During the period of Reconstruction in the South it was practically impossible to make estimates of income for that section of the country.

(b) The West was rapidly expanding. During an era of great population movements, the problem of estimating income by states or regions was almost insuperable, particularly when these movements were accompanied by the opening of new resources and the development of industry to a size hitherto unknown.

(c) Special purposes which motivated Tucker and Seaman, such as to prove that the doctrine of repudiation of the public debt was a "base one", to present an argument for the "protectionist" viewpoint on the tariff question, and so forth, were no longer present.[5]

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[3] Oswald W. Knauth, Distribution of Income by States in 1919.

[4] Cited in Donald S. Murray, Changes in the Distribution of Income by States, 1840-1938, p. 9.

[5] Idem.

The second recent series of estimates of income by states was made by Maurice Leven, also of the National Bureau of Economic Research. His study, Income in the Various States, was based upon King's estimates of the national totals. In Leven's words, the method consisted of "first apportioning separately the national totals of the various component parts of the income of the American people to the several states, in accordance with carefully computed indices, and then combining the estimates for the individual items into totals representing the income of the people in each state."[6]

Other estimates of income by states were born in the flurry of investigation following the onslaught of the depression in the early thirties. The Department of Commerce was commissioned by Congress to make estimates of national income for the period 1929-1932. The results of this investigation, conducted by Simon Kuznets of the National Bureau of Economics staff, were published as Senate Document No. 124, 73d Congress, 2d Session, National Income, 1929-32. The Department of Commerce estimates were in turn modified to yield an "approximation of the total which would be obtained from a summation of the personal incomes of all individuals in the United States," and used as a basis for a study by the Brookings Institution entitled, America's Capacity to Consume. As one portion of this study, a geographic distribution of individual incomes was made by states and larger geographic divisions for the one year, 1929.(7) As in Leven's earlier work, the state estimates are approximations computed on the basis of broad indices and are not the result of a detailed study by industries.

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[6] Maurice Leven and Willford Isbell King, Income in the Various States, p. 41.

[7] Maurice Leven, Harold G. Moulton, and Clark Warburton, America's Capacity to Consume, p. 160.

In the mid-thirties, the National Industrial Conference Board was also very active in the area of income statistics. Income Received in the Various States, 1929-1935, by John A. Slaughter of the Board staff, was published in 1937. His estimates were built up on a state-by-state basis from the data available for each state. In the case of each income item, the aggregate of the states was adjusted to correspond with an independently estimated national total.[8]

Total income payments to individuals by states have been computed for each year since 1929 and published in various issues of the Survey of Current Business. These estimates are not as useful as they might be, however, since they do not indicate industry breakdowns. Unpublished tables showing total income payments in Kansas by type of payment and industrial source for 1929, 1933, 1939, and each subsequent year were forwarded to the writer by Charles F. Schwartz, Assistant Chief, National Income Division under date of April 15, 1953. These estimates have been of incalculable assistance as benchmarks in the present endeavor (Appendix Table 15). In a letter dated December 7, 1953, Mr. Schwartz advised that the Department of Commerce state estimates were currently being revised to accord with the definitions of personal income in the national series. This completes the brief account of what has been done by research organizations of national and international reputation in the matter of state income estimates.

It was inevitable that planning boards, business research bureaus, and graduate students would attempt estimates for their individual states or regions. The study by Howard Bowen entitled, Iowa Income:

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[8] John A. Slaughter, Income Received in the Various States, 1929-1935, pp. vi-vii.

1909-1934, published by the Bureau of Business Research, University of Iowa, in 1935, was one of the earliest of this type. Like King, Bowen chose to measure income produced—the amount which is available to pay for the services of the factors of production actually employed in the state, rather than income received—the total claims to goods and services flowing to the residents of the state. The reason given was that production data were more readily obtainable than income data.[9] A recent investigator, Robert M. Soldofsky, used a similar procedure and rationale in his doctoral dissertation.[10] The theoretical implications of such a decision will be discussed shortly.

ALTERNATIVE METHODOLOGIES

In spite of the unquestioned fact that production data are more readily available than data concerning income received by the residents of the state, the present estimates have been made on the latter basis. In other words, the study follows Knauth, Slaughter, and the Department of Commerce rather than King, Leven, Bowen, and Soldofsky. For national estimates there should be no significant difference, since, for all practicable purposes, it is merely a matter of looking at different sides of the same shield. For state estimates, however, the results may differ considerably. The methodology chosen should be selected in accordance with the general purposes of the estimates.

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[9] Howard Bowen, Iowa Income: 1909-1934, pp. 12-13.

[10] Robert M. Soldofsky, Arkansas Income Since 1909, unpublished Doctor's dissertation, Washington University, St. Louis, 1953.

Ideally, two sets of estimates should be made for each state. One would show the amounts originating from industries located in the state; the other would cover amounts received by individuals residing in the state. The totals of such estimates would differ, because there is no necessary connection between the residence of the stockholder and the situs of the property from which he receives dividends. The same is true of mortgage holders and recipients of net rent. Not infrequently, even in the matter of salaries and wages, the recipients reside in different states from those in which they work and in which the compensation is paid. To date, however, no one has published both such estimates on a state basis. Each investigator has chosen either "net value produced" or "income payments received by individuals."

Estimates of the net value of product of a state provide a measure of the economic importance of that state as a contributor to national income. Classified by industrial source, these figures not only measure the relative importance of different industries in the economic life of the state but also make it possible to analyze economic fluctuations within the state on the basis of its unique industrial structure. If the net value product were compared with income payments received by individuals, it would provide some evidence of the validity of the belief that certain states--particularly in the South--"produce" a much greater supply of goods and services than are available for consumption by their residents.[11]

The line of reasoning behind estimates on a "net value produced" basis would seem to be as follows. The situs of ownership is irrelevant and incidental in the matter of income produced. The contribution of capital is made where the physical capital is located, and the yield of that contribution should be allocated to the state where the assets are located, not to the state of residence of the person possessing the claim to these assets. The "income received" measure of income is not indicative of the productivity of labor and capital residing in a given state. If the investors were to move about frequently from state to state, there would be marked shifts in the figures, whereas the goods and services coming into being within each state might actually remain unchanged.[12]

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[11] R. R. Nathan, "Some Problems Involved in Allocating Incomes by States," Studies in Income and Wealth, Vol. 3, p. 407.

A proponent of the "income received" concept, following traditional economic reasoning, might argue as follows:

> Capital equipment accumulates through the investment and savings process, the savings representing an abstention from consuming all that is produced. By saving, individuals acquire goods or claims thereto, and receive income for making the goods available for further production. Without savings the capital equipment would not exist and without the decision of the owner it would not be made available for further production. Therefore, the contribution of capital to production is the contribution of the owner and the product of its use should be allocated to the owner wherever he may be.[13]

The basic question seems to be whether any particular importance is to be attached to a geographic area as such, or whether the important factor is the persons within the confines of a certain state or area. Seemingly, a territory apart from its residents has limited significance, and allocation would be more fruitful with reference to the geographic location of individuals rather than territorial boundaries as such. A case in point would be the operations of the Boeing Airplane Company in Kansas. The company is incorporated in Delaware and has three plants in the Seattle-Renton area as well as the two at Wichita. Should Kansas be credited with the full net value product of Boeing operations in Kansas or with only that portion received by Kansas residents in the form of wages, salaries, and property income? It is certain that most of the dividends paid by the company are to nonresidents of Kansas.

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[12] Nathan, op. cit., p. 412.

[13] Ibid., pp. 411-412.

In view of the above considerations, the concept "income payments received by individuals" has been chosen for this study. Income received by residents of Kansas for their labor and for services of their property wherever located, as well as other income not related to current services, is thus included.

RATIONALE OF ANNUAL ESTIMATES BY STATES

Many questions may have been raised in the mind of the reader up to this point. Why are states chosen as the units to be studied rather than census economic areas or other more appropriate economic entities? Why the attempt to make annual estimates—particularly for earlier years—based upon scanty data when estimates for decennial census years exclusively would undoubtedly be subject to a much narrower range of error? What interpretations can be placed upon annual estimates on a state basis? These questions will be answered briefly at this point. It is hoped that the answers given will be confirmed in the reader's judgment by the evidence presented and results obtained in the remainder of the study.

It is readily granted that states are chosen for economic studies largely for practical considerations, since they are primarily for administrative purposes and inherently have limited economic significance. These limitations, however, seem to reduce the serviceability of the "income payments received" concept less than that of "net value produced."[14] While states are not suitable economic units, they can be used, singly or in groups, as first approximations to broad economic entities. As administrative units for tax purposes, for enactment of laws of an economic nature, and related matters, they are not entirely devoid of economic importance. Furthermore, as a practical matter, it must be recognized that basic data for income estimates are byproducts of information collected for other purposes and are not sufficiently detailed to permit construction of estimates for areas smaller than states except for very recent years. A noneconomic factor of importance is that states are entities or institutions to which emotions, attitudes, and prejudices are attached.[15] Certainly, a study such as this would have more appeal to a former Kansan than one entitled, "Changes in Income in Economic Area 4-A." Another very practical reason for estimates by states is that the Department of Commerce estimates—in fact, all studies covering any appreciable period of time—have been on a state basis.

Some readers may question the need for continuous annual estimates. "Since they are necessarily only rough approximations useful in a study of short-term changes in the economic scene, would it not be sufficient to estimate income for single years at substantial intervals, preferably those for which censuses were taken?" Kuznets discusses this point at some length:

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[14] Nathan, op. cit., p. 413.

[15] Soldofsky, op. cit., p. 7.

> . . . estimates for any single year are inevitably affected by the economic conditions peculiar to it: the phase of the business cycle through which the country was passing and the conjuncture of events. For example, from estimates for 1919 and 1929, the character of the changes during the decade could scarcely be inferred; and from estimates for a single year, it would be impossible to infer which magnitudes and relations are persistent and which contingent upon conditions peculiar to it. To differentiate between transient and persistent elements we must have estimates for several time units.
>
> . . . .
>
> Consequently, whether one is content with annual estimates at decennial, quinquennial, or biennial intervals or strives for a continuous annual series depends primarily upon the period for which one wishes to establish significant changes or differences in national income and its components. From decennial estimates we can establish tendencies free from cyclical and casual disturbances only for sixty years or more, and must treat the entire period as a unit, since we cannot isolate the secular changes peculiar to any part. With quinquennial estimates we can study the non-cyclical, persistent movements during a shorter period, say thirty to forty years; from annual estimates we can approximate secular movements for still shorter periods. In other words, cyclical and other transient changes can be the better distinguished and the persistent movements for shorter periods studied with greater accuracy the shorter (up to a certain limit) the intervals separating the estimates. . . . a series composed of estimates for not too infrequent time units is needed in order to separate the persistent from the transient differences and study the former closely during relatively brief intervals.[16]

Apparently, if a study of the economy of Kansas were limited to decennial estimates only, the "baby would be thrown out with the bath." The record of minor recessions, crop failures, much of the boom accompanying World War I, and the depression of the thirties with its intriguing study of varying rates of change by states and industries would all be lost. Therefore, annual estimates—with all of their shortcomings—have been painstakingly compiled for the additional insight it is hoped they will provide into Kansas economic development.

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[16] Simon Kuznets, National Income and Its Composition, 1919-1938, pp. 122-123.

ADDITIONAL CONCEPTS AND DEFINITIONS

The system of income accounts used in state estimates is perforce much more simple than that used in the national income series. The 1947 revision of the Department of Commerce national estimates introduced four series believed to be the most generally useful for the various problems requiring a measure of income or output: national product, national income, personal income, and disposable income—arranged to show the interrelationships of the various magnitudes. The national product is a measure of the flow of goods and services in terms of market value; national income is output in terms of the factor costs of producing it—aggregate earnings of labor and property which arise from current production. The accounting system is based upon a division of the economy into four major sectors—business, consumers, government, and foreign. They are thus separated because the economic behavior and motivation of each is quite different; to distinguish among them is deemed necessary for an understanding of the economy in terms of the interactions of its constituent parts. A summary account of the four sectors is maintained as a National Income and Product Account, as well as four current accounts, one for each of the sectors. The sector account for business is in essence a consolidated profit and loss account for the business system as a whole. Accounts for the other sectors represent current receipt and expenditure accounts in conformance with the nonprofit-making character of their transactions.[17]

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[17] For complete details see United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, pp. 19-54.

Personal income—the only one of the above-mentioned accounts utilized in the present study—is derived from national income by deducting from it all incomes earned in current production but not received by persons and by adding to it the incomes received by persons but not earned in current production. In its estimates, the Department of Commerce includes as persons not only individuals (including owners of unincorporated enterprises), but nonprofit institutions, private trust funds, and private pension and welfare funds.

"Income Payments Received by Individuals," as presented in the current study, is comparable to the Department of Commerce "Personal Income" in its national estimates with the following exceptions:

(a) No effort has been made to estimate income of nonprofit institutions, private trust funds, or other funds classified as "persons".

(b) Imputed net rental returns to owner-occupied nonfarm dwellings is included in the Department of Commerce estimates, but excluded from the Kansas estimates. It should also be noted that the unpublished state series of the Department of Commerce also excludes imputed rent.[18]

(c) The Kansas estimates attempt no inventory valuation adjustment for unincorporated enterprises as do the national estimates.

(d) Imputed interest equal to the value of the services of banks and other financial intermediaries rendered to persons without assessment of specific charges is included under property income by the Department of Commerce since 1947. This has not been attempted on a state basis.

The Department of Commerce labeled its estimates "Income Payments to Individuals" prior to 1947, after which the term "Personal Income" was substituted. The latter term was deemed more appropriate for an estimate including such items as income in kind, income of proprietors and rental income to which no explicit cash payments correspond. As previously mentioned, the official estimates also cover nonprofit institutions, pension, welfare, and trust funds as well as individuals.

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[18] Letter to writer from Charles F. Schwartz, Assistant Chief, National Income Division, dated December 7, 1953.

LIMITATIONS

Since the interpretations to be placed upon these estimates comprise the major contribution of the study, they obviously need not require lengthy discussion at this point. On the other hand, it should be profitable to indicate what uses cannot be made of the data presented. The estimates cannot be used to measure the level of general social and economic welfare, because they cover only income currently received and exclude many items having a direct bearing on real welfare. Many items are specifically excluded, such as services of housewives and other members of the family, earnings from odd jobs, imputed income from the ownership and use of durable consumer goods, changes in value of assets, earnings from illegal pursuits, and so forth.

It should be thoroughly understood that the estimates are inapplicable as a measure of comparison among various states, since the proportion of houses owned undoubtedly varies considerably from state to state. The inclusion of imputed income from owned houses would yield different results than would monetary income alone. Also subject to a great deal of variation from state to state would be income derived from housewives' services and from functions performed by individuals for themselves or for other members of the household. It is certain that the proportion of laundering, cooking, and similar services performed within the home, as compared with commercial enterprises or hired help, varies considerably from one region to another, thereby limiting the comparability of estimates confined primarily to income derived from the production of goods and services for sale in the market. Furthermore, goods and services which are part of the consumption pattern of one area are entirely absent or rare in another—for example, legitimate theaters, meals at restaurants, and so forth. While the first impulse of the uninitiated is to view a higher per capita income in one state as indicative of a proportionately higher standard of living, such a conclusion is not justified.[19]

The above limitations are applicable to urban or rural nonfarm localities of various sizes and different regions. The varying proportions of agricultural to total income make interstate or welfare comparisons even more misleading. Agricultural income on a total or per capita basis as currently computed is not comparable with income of other economic groups. Rural living is economically so different from the mode of living in urban and suburban places that direct and unqualified comparisons of income in the two groups would be of little significance. No method has yet been devised to evaluate all of the elements entering into the comparative standards of living on farms and in urban areas. Differences in the quality of recreational, educational, and cultural facilities available are an important factor. The comparatively expensive clothing and sanitary facilities which are necessities in the cities are not essential on the farm to maintain a comparable standard of living. Ownership of some means of transportation, on the other hand, is a necessity on the farm but not in the city. A considerable portion of the income of farm households consists of income in kind consumed directly without exchange of any kind. If farm incomes are to be compared with urban incomes, the valuation of these goods should be based on what the items would cost in terms of urban income, that is, at retail prices. Present estimates are in terms of value at the farm. Another problem is joint costs between production and living. The farm automobile, for example, is frequently used for both business and pleasure. The arbitrary allocation of a certain percentage of vehicle operating expense to production expenses has a direct bearing upon the net income estimates.[20]

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[19] Nathan, op. cit., pp. 405-406, 428.

On a per capita basis, historic differences in the age composition of the farm population as contrasted with the nonfarm population make comparison difficult. A given per capita income in a farm community with a relatively high percentage of its total population under 20 or over 65 years of age would not under any circumstance have the same significance for welfare considerations as that same per capita income in a nonfarm community composed of a relatively high percentage of adults. This age factor alone has been considered by some authorities sufficiently important to account for most of the apparent disparity in the ratio of farm income to total income as compared with the ratio of farm population to total population.[21]

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[20] Robert F. Martin, Income in Agriculture, 1929-1935, pp. 1-11.

Still another reason why connotations of welfare should not be attached to the changes in income over time indicated by these estimates —even within the state—is that no attempt has been made to deflate the series in any way. It has long been recognized that large year-to-year increases in real income, that is, the volume of serviceable goods available for use by the population, are due either to a marked improvement in the harvests, a marked increase in industrial activity, or to both of these changes occurring simultaneously. Until the point of full employment or nearly full employment is reached, gains in real income can be made rapidly. Once the labor force is nearly all employed and the factories, mines, railways, and land are used at full capacity, further increases of output slow down to the rate made possible by current increase of population, development of natural resources, construction of new equipment, and improvement in methods.[22] Therefore, a large proportion of the extraordinary gains in money income accompanying wars are due to fluctuations in prices. Because of the differences in ratios of unemployed resources, proportions of population living in urban versus rural communities, consumption patterns, and so forth, no single index could be satisfactorily applied to both Kansas and United States data. Even for the nation, there is no single consumer's price index which could be used for the entire period, 1900-1952. To attempt the construction of such an index for Kansas could well involve as much research and computation as has been involved in the compilation of the present estimates. None of the other state estimates discussed in Chapter II has been deflated, presumably for the above reasons. Although this limitation effectively precludes welfare considerations, it does not seriously hinder comparisons of rates of change between Kansas and the United States—the primary use made of the estimates in this study.

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[21] A. G. Black and J. D. Black, "Research in Agricultural Income: Scope and Method," Social Science Research Council, Bulletin No. 6, June, 1933, p. 19; cited in Martin, Income in Agriculture, 1929-1935, p. 3.

[22] National Bureau of Economic Research, Income in the United States, Vol. I, pp. 75-77.

This preoccupation with purely monetary terms to the exclusion of goods and services for the use of human beings—the presumed purpose of all economic activity—is a regrettable feature of present income estimates. Ideally, the process of measuring income or the value of the net product of the economy would comprise the listing and evaluation of the various commodities and services acquired by consumers, and of additions to capital acquired by business concerns with allowances for changes in inventories.[23] Estimates of income consumed might well be more significant as measures of economic welfare than are estimates of income received. On a state basis, they would include the value of goods and services consumed by individuals within that state, probably confined to consumption by regular residents so that the income and number of persons or consuming units would be comparable.[24]

All of the weaknesses and shortcomings present in national income estimates in general apply to state studies. The estimates are based upon a net return to capital but a gross return from the direct use of human services. The capital of business and public enterprises is assumed to be kept intact, but such a criterion is not applied to the "capital" represented by human capacity. Kuznets, in commenting upon this incongruity, maintains that his estimates do follow the general notion that what is to be measured is the positive contribution of the economic system to the satisfaction of the present and future needs of the nation as a body of ultimate consumers. The notion of ultimate consumption is essentially derivable only from the view that goods exist for men, not men for goods.[25]

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[23] Clark Warburton, "Accounting Methodology in the Measurement of National Income," Studies in Income and Wealth, Vol. I, pp. 70-74.

[24] Nathan, op. cit., pp. 405-406.

This type of argument is not satisfactory to Edgar Z. Palmer, who notes that in arriving at net income, the cost of keeping a horse is always subtracted from the gross income of his services, but the minimum cost of keeping a man is never subtracted. As a possible explanation for this, he suggests that it may be as Irving Fisher once said, because it would reveal certain classes of people to be receiving no net income. Palmer also urges recognition of the idea that money means more than the purchase of materialistic goods and services—it means also prestige, power, security, and other intangible elements whose ultimate translation into goods and services is remote or improbable. When this understanding is reached, he states, the reconstruction—not only of statistical—but of economic theory of income will have begun.[26]

The estimates are based exclusively on the valuation of the market place. For Kuznets, this is regrettable, since he would prefer productivity judgments based on a more enlightened social philosophy than that of an acquisitive society. From such a vantage point, one would see much of dis-service rather than service in the present scheme. Examples might be expenditures on armament, most of the outlays on advertising, much of financial and speculative activity, and the outlays which have been made necessary in order to overcome difficulties that are actually costs implicit in our civilization. Subways, expensive urban housing, and other necessary evils are, from the standpoint of the individuals comprising the nation, largely business expenses rather than living expenses and thus do not represent net services or contributions to welfare.[27]

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[25] Kuznets, op. cit., pp. 36-38.

[26] Edgar Z. Palmer, "Review of Studies in Income and Wealth, Volume One," Journal of American Statistical Association, Vol. 33, No. 203, September, 1938, pp. 629-630.

SPECIFIC VALUES

In spite of their weaknesses, the estimates as computed can serve many useful purposes. Because they reduce the voluminous detail of economic activity to intelligible proportions, such estimates have become widely used as the factual background for economic analysis and the preparation of economic programs. In addition to fulfilling their traditional purpose of providing information on the outcome of economic activity through comprehensive measures of the size, composition, and source of national output, they provide the basic statistical framework required for the study of long-term economic trends and of business fluctuations. Increasingly, they have been used to facilitate an understanding of the factors which determine the outcome of economic activity.[28]

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[27] Kuznets, Discussion of M. A. Copeland, "Concepts of National Income," Studies in Income and Wealth, Vol. I, pp. 36-37.

The specific value of state estimates can be summarized in the words of Kuznets as follows:

> The value for analytical purposes of allocating income by states lies in the fact that, like all breakdowns of larger totals, it may reveal effects of different combinations of factors and thus facilitate the isolation of the specific effects of each. Whether income by states is treated as the independent variable that affects others or as a dependent variable affected by others, the establishment of the distribution by states may reveal a range of variation that can be associated with variation, within the same state units, of other factors. It may thus provide leads in the search for stable relations, the establishment of which is the final goal of all scientific analysis.[29]

PURPOSES OF THIS STUDY AND ORGANIZATION OF ITS CONTENTS

In addition to the general goals so aptly summarized by Kuznets, the following have been the objects of this particular study:

(a) To develop estimates of income payments received by Kansans which will be basic reference material for anyone wishing to analyze the Kansas economy or any of its major sectors from a historical standpoint.

(b) To discover and measure changes in the economic base of the state.

(c) To study and analyze the varying reactions of different industries within the state to economic disturbances in the nation.

(d) To observe and analyze the impact of changes in farm income upon the total economy of the state.

In the accomplishment of the above objectives, the remainder of the study has been organized in the following manner. Chapter II presents a brief discussion of the methodology used in each component of the estimates, a survey of the relative reliability of the various series, and a comparison with other estimates. Chapter III is the basic analysis of changes which have occurred in the state's economy from 1900 through 1952. Analysis of the period 1900-1939 is based upon the present estimates of Kansas income. Subsequent to 1939, annual estimates of the National Income Division, Department of Commerce, have been utilized. Chapter IV presents a summary of past developments and hazards a guess as to the future. The Appendix includes all basic detailed tables used in the compilation of the original estimates for 1900-1939, and gives a detailed account of the methodology and sources of each item. The Bibliography is of necessity a lengthy one because of the multiplicity of sources which must be consulted for a study of this kind. References used in analysis are a select group and are not intended to constitute a complete list of all articles and books concerning state income estimates.

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[28] Department of Commerce, National Income and Product of the United States, 1929-1950, p. 19.

[29] Kuznets, Discussion of Nathan, *op. cit.*, pp. 431-432.

CHAPTER II

TECHNICAL CONSIDERATIONS OF THE PRESENT ORIGINAL ESTIMATES

METHODOLOGY

In a study of this type, the methodology depends to a large extent upon the nature of the data available. No amount of wishful thinking or statistical manipulation will satisfactorily reconstruct accounts of business transactions which were not recorded when they occurred or soon thereafter. There is much truth in the advertisements of photographic agencies stressing the urgency of recording treasured scenes ere they are gone forever. Frequently, the student attempting income estimates is in the position of one trying to judge the size of a picnic group by the litter left around the campfire.

While the frontier was still beckoning to be conquered and the race was on to raise the level of industrial arts in America to that of the more advanced countries, attention was focused on production. Problems created by the distribution of national income and its utilization by ultimate consumers seemed relatively minor and resolvable in the upward rush of industrial production. Hence, there was a premium on information on productive activity, on the achievements of the industrial system in terms of number and value of goods produced, men employed, and so forth, rather than on goods consumed or the shares of individuals in the national totals. Since production data were the primary interest of those in control of the enterprises, such data were collected and recorded. During recent years, greater concern over distribution of income among ultimate consumers and between consumption and savings has resulted in a change in the emphasis of questions asked and an increase in information reported in terms of individuals and household units.[30]

The current change of attitude, however, has no effect on the records of the past. Data are most abundant for industrial divisions where the corporate form of organization is prevalent and which are concerned with the extraction, fabrication, and transportation of commodities, or the provision of publicly regulated services—mining, manufacturing, steam railroads, electrical industries, and communications. Even in these industries, difficulty is the rule rather than the exception. Data concerning non-money income such as food and lodging, gratuities, compensation for injury, pensions, and so forth are practically nonexistent. Income of proprietors of unincorporated businesses is not reported by the censuses; neither is there a record of property income arising from such enterprises. Estimates of property income from any source are very crude even in the national figures, particularly for interest and rental income.

Basic census data are undoubtedly incomplete due to the exemption of establishments with low gross value of product, unintentional omissions, evasion, and so forth, but the magnitudes involved are believed to have been so small as to have only insignificant effect on the estimates of income.[31] Deficiencies of data in construction, trade, service, government, and agriculture present even more difficulty as will be apparent in the following brief discussion of the estimates by industry and type of income. A detailed discussion of methodology and sources is included in the Appendix of the study.

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[30] Kuznets, National Income and Its Composition, 1919-1938, p. 130.

[31] *Ibid.*, p. 105.

Wages and Salaries

Agriculture. Wages in agriculture are, of course, a source of expense to farm operators and are therefore a part of the enormous task involved in estimating total production expenses. Data concerning agricultural wages are available from the agricultural censuses and have been adjusted and interpolated by use of additional data from the Bureau of Agricultural Economics and the United States Department of Labor.

Mineral industries. Adequate statistics are available for reliable estimates of total earnings in bituminous coal. In addition to periodic census data, information collected in connection with mine safety inspection concerning the average number of men employed was of great assistance. Total wages were computed by obtaining the product of man-days worked and an average daily wage. Miscellaneous minerals provided no serious difficulty. The petroleum and natural gas industry has developed from insignificance to its present important position within the period covered by these estimates. It was covered by censuses for 1902, 1909, and 1939. The omission of petroleum and natural gas from the census of 1929 makes an unusually long break between benchmark years. Furthermore, drilling and exploratory operations were not uniformly covered by the various enumerations. Employment in developmental work and in operations was estimated by the use of ratios of employees per well drilled and well producing, computed for census years. The estimated number of employees was multiplied by average yearly earnings based on census data and interpolated by an index of earnings in Kansas manufacturing.

Manufacturing. Census data concerning wages and salaries in manufacturing are more frequent and complete than for any other industry, due in large measure to the interest in industrial production as explained above. Average wages were computed for each of the census years and assumed to move in the same direction and at the same rate as the index of average annual earnings of employed manufacturing wage earners in the United States as computed by Douglas.[32] Kansas employment in manufacturing was interpolated for noncensus years by use of an index of manufacturing employment in the United States through 1928. Beginning with 1929, Kansas data as compiled by the Kansas Commission of Labor and Industry were utilized. The number of salaried employees was estimated by use of ratios of salaried workers to wage earners computed for each census year and applied to the annual estimates of wage earners.

Construction. The methodology of these estimates is simple enough—application of a ratio of wages and salaries to total value of construction. The ratio was based on census reports of the construction industry from 1929 and 1939. Census data, however, are admittedly incomplete. The state estimates of the National Income Division (Appendix Table 15) exceed the totals reported by the censuses by 8.4 million dollars in 1929 and 2.3 million dollars in 1939. The 1929 estimate for construction was extrapolated to 1915 on the basis of an index of Kansas loans and discounts by commercial banks adjusted by the percentage relationship of the United States index of the value of construction to the index of total loans and discounts by commercial banks. Prior to 1915, no federal data were available, so the index of Kansas loans and discounts was used without adjustment. Such a procedure might well allow for as much as 50 per cent error, although there is some reason to believe the error is not that large (see discussion of reliability, page 34 *infra*).

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[32] Paul H. Douglas, Real Wages in the United States, 1890-1926.

Transportation. Statistics concerning corporations regulated by public bodies are relatively easy to obtain. Wages and salaries are not usually given separately for states but have been estimated by applying ratios of employee compensation to total operating revenues. Compensation of employees of local railways and bus lines has been reported quinquennially by the Census of Electrical Industries. Specific information concerning Kansas payrolls in the increasingly important highway freight and passenger transportation sector of the industry is nonexistent. There are, however, federal data for both railroad and motor transportation. A ratio of wages and salaries in highway transportation to railroad payrolls was computed for the United States and assumed applicable to Kansas for the years 1929-1939. The 1929 estimate was extrapolated to 1921 on the basis of motor fuel consumption by trucks outside cities. Admittedly, such a procedure is very rough, but it appears to be logically more defensible than leaving motor transportation completely out of account.

Communications and public utilities. Estimates are primarily the result of applying ratios of employee compensation to total operating revenues. As in the case of railroad transportation, data are fairly readily available in reports of the regulatory commissions or other public documents.

Trade. The census data for this important industry cover the years 1929, 1933, 1935, and 1939, but are incomplete and evidently unusable without considerable adjustment. Prior to this date, there are practically no state data on total sales and no information on wages or salaries paid. Furthermore, there is no adequate index by which the 1929 figure could be extrapolated to cover earlier years.

Although estimates of income from trade have been made by King, Kuznets, and others, the method used is not applicable to state studies. Leven, in his state estimates for 1919-1921, combined trade, transportation, public and professional services, and miscellaneous without attempting separate estimates for any of them.[33] Bowen's study of Iowa income extrapolated the 1929 census data on retail trade to 1923 on the basis of an index of department store sales. Prior years were extrapolated on the basis of an index calculated from (1) total income produced in Iowa from all sources other than trade and (2) the ratio of total realized income paid to retailers for the entire United States, calculated by W. I. King in his The National Income and Its Purchasing Power. The 1929 census data on wholesale trade were extrapolated similarly on the basis of an index of wholesale drug sales for Iowa to 1923; for prior years, on the basis of wholesale sales in the entire

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[33] Leven and King, op. cit., pp. 108-109.

United States.[34]

For purposes of the present estimates, it appeared reasonable to utilize as the computing factor the fairly stable relationships existing between trade and all other income except trade and services. The source of this data for the United States was Martin's valuable study of national income.[35] The United States proportion of income earned in trade was assumed applicable to Kansas to obtain estimated income from Kansas trade. Martin also estimates the relative shares of this total income going for wages and salaries, entrepreneurial income, and so forth. These percentages were adjusted for Kansas on the basis of state data from Slaughter's Income Received in the Various States, 1929-1935. Slaughter's data indicate that wages and salaries constitute a smaller percentage of income from trade in Kansas than for the United States generally. Such a result appears logical in view of the high percentage of small stores in the state operated by the owner with little or no hired help.

Finance. Salaries for banks are quite reliable, obtained primarily from reports of the State Bank Commissioner and the Comptroller of the Currency. Data concerning payrolls of financial institutions other than banks can be estimated only since 1929 with the aid of Department of Commerce national estimates and the 1935 Census of Business.

Direct information concerning premium income from insurance sales in the state is not available, but what appears to be a defensible approximation was obtained by indirection from published reports of insurance sold by category. The ratio of salaries to commission income was estimated on the basis of the census of the insurance business included in the 1935 Census of Business. Evidence as to how much of the premium income went to active proprietors and firm members as entrepreneurial income and how much was allocable to agents and employees is completely unsatisfactory. Based entirely upon the number reported engaged in insurance in 1935, 65 per cent of total income payments thus computed was included under employee compensation; the remainder appears under entrepreneurial income.

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[34] Bowen, op. cit., pp. 106-107.

[35] Robert F. Martin, National Income in the United States, 1799-1938.

The real estate business is comparable to construction and trade in lack of appropriate data. An estimate of earnings from real estate sales and transactions for 1935, based on the census of that year, was extrapolated for previous years by the same method used for wages in construction. As in the case of insurance—and on the same basis—65 per cent of the indicated income was included as wages, salaries, and commissions, while the remainder appears under income of proprietors.

Government. Estimates of post office salaries are relatively simple and reliable. Military and miscellaneous civilian payrolls of the federal government paid in Kansas are not available except by personal inspection of records in the office of the Chief Archivist, Washington, D. C. Even then, the methodology would be indirect—probably involving multiplication of the number of persons present in Kansas for each year by average army rates of pay. Civilian payrolls would be still another matter. In lieu of this expensive, perhaps unsatisfactory procedure, King's data from The National Income and Its

Purchasing Power were used to compute the percentage which federal, state, and local governments, plus the Post Office Department, constituted of total government payrolls in the years covered by his study. Dividing these percentages into comparable figures for Kansas resulted in an estimated total which included military and miscellaneous federal payrolls; the latter were derived by subtraction.

Information on state and local payrolls of various kinds has been derived from scattered sources for widely separated years. Estimates of state payrolls are based upon estimated percentages of total expenditures going for wages and salaries as computed primarily from Solomon Fabricant, Trend of Government Activity Since 1900. Expenditure data for states are available yearly from 1915 to date and for 1902 and 1913. Data for local governments, with the exception of the large cities, are available only for 1902, 1913, and 1932. Relationships between the large cities and other governmental units were computed for these years and used to compute estimated expenditures for all interim periods. Fabricant's estimates of relative expenditures for wages and salaries were again utilized. Total salaries in the public education system are published in Biennial Reports of the Kansas State Superintendent of Public Instruction.

Service. The percentage relationship which wages and salaries in services bore to similar compensation in trade was computed from Martin's estimates for the United States. According to Slaughter's state data, Kansas wages and salaries in services did not increase as rapidly relative to trade during the twenties as was true for the nation as a whole, so an adjustment was made accordingly. Thus, wages and salaries in services were consistently tied to those in trade. Although the relationship posited may not have been the one actually existing, it is relatively certain that these two values could not get far out of line with one another.

Miscellaneous. The miscellaneous category is, of course, a measure of the residual which has not been accounted for under the various industrial divisions. It is a confession of the impossibility of measuring adequately certain sectors of the economic system. Since no attempt was made to set up controlling figures for the state, it was necessary to assume that the percentage of wages and salaries omitted from account by industry was approximately the same for Kansas as in the United States estimates by Martin. Wages and salaries in trade, services, and miscellaneous were subtracted from total wages and salaries and the percentage which miscellaneous constituted of the subtotal computed. These percentages were then applied to comparable Kansas data. The results were gratifyingly close to those of the National Income Division.

Entrepreneurial Income

Net income of farm operators. Net income of farm operators as used in this study is what the title implies. Gross income of all farm operators has been computed, using all available data. In addition to income from crops and livestock, the estimates include gross rental value of farm dwellings, government payments, and value of products consumed by farm families. Total production expenses have been deducted. Details of the major items and their components will be found in the Appendix. The state estimates of the National Income Division classify net rents received by both farm and nonfarm landlords as part of property income. In the present study, rents paid to nonfarm landlords are counted as an expense of production, but rents received by landlords living on farms have not been segregated from other income. As a result, income of farm operators runs higher than in the Department of Commerce estimates, while property income is lower. No attempt has been made to adjust for changes in value of inventory.

Mining. Entrepreneurial withdrawals were approximated by multiplying the average compensation of employees in mineral industries by the estimated number of entrepreneurs.

Manufacturing. Average earnings times estimated number of entrepreneurs was utilized as in mineral industries.

Construction. A ratio of entrepreneurial withdrawals to gross income was computed for Kuznets' data and applied to total estimated value of construction.

Trade. Total income from trade was multiplied by the estimated percentage allocable to entrepreneurial income.

Finance. Entrepreneurial income consists of commissions and fees of the self-employed in insurance and real estate.

Service. Professional incomes, constituting the bulk of such earnings, were estimated separately each year for physicians and surgeons, dentists, lawyers, veterinarians, and miscellaneous professions. The percentage which professional incomes constituted of total entrepreneurial income in service was computed from Kuznets' data. Dividing these percentages into estimated professional income yielded the figures reported in this category.

Miscellaneous. Martin's percentages of entrepreneurial income in miscellaneous industries were utilized to obtain these estimates.

Property Income

The method chosen to estimate property income received by Kansas residents was determined by the data available. Since there is no necessary connection between the location of the property owned and the residence of the owner, the most reliable indicator of the proportionate share of national property income allocable to Kansas residents would seem to be the proportionate share of property income reported by Kansans to total property income as reported in Statistics of Income. This source of information begins with 1916. An average of these percentages for several nonwar years was used for earlier years. Estimates of total property income in the United States have been made by the Department of Commerce, Kuznets, King, and Martin. Each of these was used as explained in the Appendix.

Other Income

This item includes public assistance and other direct relief, military pensions, workman's compensation, unemployment compensation, and railroad retirement benefits.

RELIABILITY

> . . . even members of this fraternity (students of national income and wealth) cannot make bricks without clay, though they have been known to get along without straw. At most, then, their efforts have yielded reliable figures covering

limited and relatively recent periods.[36]

According to authorities of the National Income Division, one of the most disconcerting features of national income estimation is that even for recent years the degree of accuracy of a given estimate cannot be measured by a frequency distribution of similar estimates around the universe value. The many source materials and procedures utilized are not of such a nature as to permit calculations of the probable errors in the various income and product series.[37] If the estimates of national income based on the wealth of data available to the Department of Commerce cannot be assessed with mathematical precision for the years since 1929, there is even less possibility that probable errors in state estimates could be mathematically approximated. The main reliance, then, must be upon a detailed analysis of the statistical sources and methods underlying them as the basis for qualitative judgment. The general aim must be to decide whether the reliability of the estimates is sufficiently high to warrant the specific use intended. To this end, a detailed appendix has been prepared for this study to enable any reader to judge for himself as to the reliability of any given series or the totals.

It is readily granted that many of the components leave much to be desired. Frequently, the primary justification for the use of a given source or methodology is that it is the only one available. The problem has been succinctly stated by the Department of Commerce:

> In general, a long and involved estimating chain can be taken as a sign of statistical weakness, although this rule must

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[36] Solomon Fabricant, "The Changing Industrial Distribution of Gainful Workers: Comments on the Decennial Statistics, 1820-1940," Studies in Income and Wealth, Vol. 11, p. 3.

[37] Department of Commerce, National Income and Product of the United States, 1929-1950, p. 56.

> be qualified in the light of the adequacy of the supplementary data introduced and of the cogency of the procedures adopted. Simplicity of procedure, however, cannot be taken as an evidence of absence of statistical weakness. It may only mean that reliable data for making necessary adjustments are not available, and that summary, arbitrary assumptions have been used instead.[38]

The reluctance to attempt calculations of probable error of the estimates has not been shared by several of the pioneering income investigators. Mr. King and Mr. Knauth both made conjectural estimates of the probable error in each major category of their estimates of national income. That is, they assumed a range in millions of dollars within which they thought the true figure was equally likely to lie or not to lie. The probable error of the aggregates for each year was computed by squaring the estimated errors, adding the squares and extracting the square root of the sum. This figure was then expressed as a percentage of the total national income. This process would give the correct probable error if the errors assigned to the individual items were valid, if the errors were not positively correlated with each other, and if they tended to be distributed in a "normal" manner. They concluded that the final estimates of the national income were probably accurate within 5 per cent, and believed it unlikely that the error in any year exceeded 10 per cent.[39]

Kuznets attempted to judge the margin of error in his major study by having the three people most familiar with the project place each of the estimates in its proper class as to range of error, that is, an error of 5 to 10 per cent, 10 to 20 per cent, 40 to 80 per cent, and so forth. The classification was based upon maximum error, not the minimum or average error. When each investigator had rated them, all margins were raised by one half, because they found that each of the three tended to underestimate the error attaching to the results of his own labors. These attempted valuations were nothing more than informed opinions, since no exact criteria or specific empirical evidence were at hand by which to measure the errors more precisely.[40]

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[38] Ibid., pp. 56-57. (These pages provide an excellent discussion of the reliability of national income estimates.)

[39] National Bureau of Economic Research, Income in the United States, Vol. I, pp. 60-65.

Martin essayed a summary appraisal of the accuracy of his national estimates for the year 1929 only. According to this appraisal, 48 per cent of the accountable realized total is "fully reliable," that is, with an approximate margin of error of only 2 or 3 per cent; another 23 per cent is a "good" estimate, that is, with a margin of error of from 3 to 5 per cent; 19 per cent of the income is termed a "fair approximation," with an error of from 5 to 10 per cent; only 10 per cent of the total is labeled as an "informed guess," or in the realm of opinion. Estimates with a poor rate of accuracy are almost entirely in the entrepreneurial income and net rent categories.[41]

As mentioned on Page One _supra_, at the time of publication of his first estimates, King stated that his figures were designed to convey an "impressionistic" picture of wealth and income, since a technically accurate statistical answer was an impossibility from the sources then available. In 1930, after many years of investigation and improvement of his techniques and sources, he had this to say concerning the reliability of his estimates:

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[40] Kuznets, _op. cit._, pp. 503-508.

[41] Martin, _op. cit._, p. 96.

> Realized income consists, in the main, of the amounts received by individuals in the form of wages, salaries, pensions, compensation for injuries, interest, dividends, rents, royalties, services of durable consumers' goods, and profits withdrawn from business. All except the last two categories may be estimated with a reasonable degree of precision.
>
> The net value of the services rendered by durable consumers' goods such as owned homes, estates, automobiles, and the like can, at best, be only roughly approximated, and the amount of profits withdrawn from their own business by individual entrepreneurs is necessarily in a large degree a matter of conjecture. But, with the assistance of the Federal Income Tax reports, it is possible to estimate this last quantity within a margin of error believed to be not greater than 20 or 30 per cent.[42]

What Mr. King meant by "a reasonable degree of precision" may be inferred from the following:

> Some items are so thoroughly supported by evidence that one feels little hesitance in asserting that the errors probably do not exceed one or two per cent. For other items, satisfactory underlying data may be practically non-existent, and, in such cases, possible errors of 10, 20, or even 30 or 40 per cent may be present.[43]

Bowen was bold enough to list his estimates by industry according to the per cent of probable error:[44]

20 per cent: agriculture, minerals, forestry and fishing, manufacturing, electric power, telephone and telegraph.

25 per cent: transportation.

30 per cent: building construction, retail and wholesale trade.

35 per cent: finance.

40 per cent: government.

50 per cent: service and unclassified.

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[42] King, The National Income and Its Purchasing Power, pp. 42-43.

[43] *Ibid.*, p. 34.

[44] Bowen, *op. cit.*, p. 15.

By weighting each of these percentages on the basis of its importance in the total income of the state he arrived at an average per cent of probable error of 31.2 per cent for the total income of the state. This average, in turn, he thought to be misleading because it neglected the possibility of mutually offsetting errors. Taking these into account as well as possible omissions and duplications, he believed that the estimates of total income of Iowa were subject to not more than a 25 per cent error with the chances excellent that the actual error was considerably less. He also noted, as has been repeatedly done in the present study, that data for earlier years probably contain a larger element of error than those of later years.[45]

Soldofsky, in his previously cited study of Arkansas income, ventures only to rank the estimates by industry from the most to the least reliable, with varying spaces between different groups which he considers of approximately equal accuracy. Agriculture stands all by itself; then come manufacturing, mining, communications, public utilities, and transportation. Finance is next, followed by government at a respectful distance; trade and services are of still less reliability, and contract construction is least reliable of all.

Such a ranking is all that is attempted in the present study. For greater convenience and to re-emphasize the difference in accuracy existing in the different time periods, the industries are placed in one of four different levels and the years indicated for which this ranking is considered applicable. The attempted rankings cover primarily the estimates of wages and salaries, with the understanding that quantitative measurement of entrepreneurial income is always more questionable than employee compensation. They are as follows:

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[45] *Ibid.*, p. 16.

Level 1 Agriculture—gross income, 1924-1939.
Finance—banks, 1900-1939.
Government—post office, 1917-1939.
Government—school districts, 1900-1939.
Government—state, nonschool, 1929-1939.
Manufacturing—1921-1939.
Minerals—bituminous coal, 1900-1939.

Level 2 Agriculture—gross income, crops, 1910-1923.
Communications and Public Utilities, 1900-1939.
Government—post office, 1900-1916.
Government—state, nonschool, 1900-1928.
Manufacturing, 1900-1920.
Minerals—miscellaneous, 1900-1939.
Property Income, 1917-1939.
Trade, 1929-1939.
Transportation—steam railways, Pullman and railway express, local railways and busses, 1900-1939.

Level 3 Agriculture—gross income, livestock, dairy products, eggs and chickens, 1900-1923.
    gross income, crops, 1900-1909.
    gross rental value of farm homes, 1900-1923.
    net income of farm operators, 1910-1939.
    total production expenses, 1900-1939.
Finance—financial institutions other than banks, 1929-1939.
Finance—insurance, 1900-1939.
Government—local, 1900-1939.
Government—state public education, 1900-1939.
Minerals—petroleum and natural gas, 1900-1939.
Trade, 1900-1928.
Transportation—highway freight and passenger, 1921-1939.

Level 4 Agriculture—net income of farm operators, 1900-1909.
    gross income, horses and mules, 1900-1939.
Construction, 1900-1939.
Entrepreneurial income except agriculture, 1900-1939.
Finance—real estate, 1900-1939.
Government—military and miscellaneous civilian, 1900-1939.
Miscellaneous, 1900-1939.
Property income, 1900-1915.
Services, 1900-1939.

COMPARISON WITH OTHER ESTIMATES

Another method of indicating relative reliability of the various series as well as the totals is to compare the present estimates with those of other investigators in all areas where differences of concept or methodology are not so great as to make comparison impossible.

As noted in Chapter I, Oswald W. Knauth was the first to publish an estimate of income for the state of Kansas. His estimate for the year 1919 was 1,065.3 million dollars as compared with 1,312.8 million according to the present study. The only major breakdown attempted was total income of farmers, in which instance his estimate of 399.5 million is 89 per cent of the amount shown by this study.[46] Although his agricultural income is thus relatively close, his total income is only 81 per cent of the writer's results. There is no way to locate the source of this discrepancy due to the difference in methods used and data available.

Leven's and King's estimates for the years 1919-1921 were much more detailed and comprehensive than were Knauth's. In spite of the differences in approach and concept between Leven and the present investigator, comparison of the two results is gratifying and discrepancies are generally explainable. As would be expected, the closest agreement is achieved in those industries where census data were available for 1919—agriculture, mining, and manufacturing.[47] For the three-year period, Leven's wages and salaries comprise the following percentages of the current estimates in the specified industries: agriculture, 102; mining, 70; bituminous coal, 90; manufacturing, 102; construction, 60; all wages, 83.

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[46] Knauth, op. cit., pp. 25, 27.

[47] Leven and King, op. cit., pp. 114-116.

Agriculture, bituminous coal, and manufacturing are within reasonable tolerance limits. The low estimate for mining is due to the fact that Leven's procedures did not ascribe as much weight to the petroleum and natural gas industry as do the present estimates. According to them, petroleum and natural gas were approximately equal with coal in 1918, surpassed it in 1919, and have increased in relative importance ever since.

As for construction, a variance of 40 per cent is scarcely surprising. Leven based his construction estimates upon data on construction contracts awarded by the F. W. Dodge Corporation, the percentage of the total awarded in the various states, and an adjustment factor to allow for differences in wage rates among the states. Although his published estimates are far lower than those of this study, the methodology he used would probably have resulted in estimates higher than these if he had had access to data on total construction in the United States as prepared by the Department of Commerce and published in a recent supplement to Construction and Building Materials.[48] According to his computations, Kansas had 1.019, 0.884, and 1.315 per cent of the total volume of construction for 1919, 1920, and 1921, respectively.[49] The highest percentage attributable to Kansas by the present study was 1.13 per cent in 1919.

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[48] United States Department of Commerce, National Production Authority, "Construction Volume and Costs, 1915-1950," Construction and Building Materials, Statistical Supplement, May, 1951.

[49] Leven and King, op. cit., p. 70.

Leven's estimate for all wages is 83 per cent of that of the current study. This difference might well be expected, since he made a composite estimate for trade, transportation, utilities, finance, services, government, and miscellaneous. It is, in fact, a source of wonder that the two estimates should be as close together as they are under the circumstances. Property income is almost identical in the two studies. Leven's total income for the three-year period is 89 per cent of that shown by the present investigator. The yearly percentages are 83 for 1919, 95 for 1920, and 91 for 1921. According to Leven, 1920 was the year of highest total income in Kansas, whereas the present study indicates that 1919 was the highest. The major source of difference seems to be in the agricultural estimates where his total for the three years is only 78 per cent of that resulting from this study, and only 74 per cent of the estimate for 1919. His data indicate a moderate decline in agricultural income between 1919 and 1920, followed by a more precipitous decline of 56 per cent between 1920 and 1921. The writer's estimates, on the other hand, reach a higher peak in 1919, decline sharply (44 per cent) between 1919 and 1920, followed by a milder decline of 20 per cent between 1920 and 1921. These differences result from a divergence in computation of value of livestock marketed and of total expenses of production. Since both of these values are admittedly in Level 3 of reliability, this amount of variation is not surprising.

It would be expected that a closer agreement would be achieved with the estimates of others for the period 1929-1939, and such is the case. Wages and salaries can be compared with the unpublished estimates of the Department of Commerce for 1929, 1933, and 1939, and with

Slaughter for 1929 through 1935 (Table 1). These data provide some evidence as to the relative reliability of the various industry estimates. Total wages and salaries are gratifyingly close in all three estimates. The Department of Commerce totals average 96 per cent of this study, and Slaughter's figures average exactly 100 per cent.

Estimates which range within 10 per cent in both studies include mining, trade, and government, with agricultural wages very close to this limit. Manufacturing is within 3 per cent of the Department of Commerce estimate, but Slaughter's total for manufacturing is 11 per cent less than shown by the present study. In almost every other instance the estimates resulting from this study are close to Slaughter but a considerable distance from the Department of Commerce. For example, in transportation, there is a difference of only 8 per cent between Slaughter and this study, but the Department of Commerce averages 16 per cent lower. This latter discrepancy is limited to the two years 1929 and 1933, however, since the two estimates are almost identical in 1939. Communication, power, and gas are similar in that the Department of Commerce is far below both of the other estimates in 1929 and 1933, but fairly close to this study in 1939. Service is another industry where early estimates of the Department apparently were not as complete as those for 1939. As for finance, there is so much leeway in the estimates of earnings of insurance, real estate, and financial institutions other than banks, that this amount of variation is quite understandable.

Table 1

Comparison of Estimates of Wages and Salaries in Kansas by Industry, 1929-1939
(millions of dollars)

	Total wages and salaries	Agriculture	Mining	Manufacturing	Construction	Transportation	Communication power and gas	Trade	Finance	Government	Service	Miscellaneous
1929												
Department of Commerce	537	35	32	84	20	81	10	101	21	78	45	30
Slaughter	559	45	25	68	18	95	15	102	30	67	51	43
This study	572	36	29	85	20	101	20	109	24	65	55	28
1930												
Slaughter	535	37	23	64	30	85	16	94	27	69	48	42
This study	525	32	25	78	15	95	19	96	22	67	49	27
1931												
Slaughter	435	24	16	52	13	71	14	81	22	68	40	34
This study	437	22	19	60	10	83	15	80	19	66	40	23
1932												
Slaughter	344	15	11	40	9	54	12	60	18	66	31	28
This study	334	16	13	44	7	59	12	58	15	62	30	18
1933												
Department of Commerce	298	12	15	45	5	41	6	54	13	64	24	19
Slaughter	308	12	15	38	5	50	11	50	14	59	28	26
This study	311	13	14	44	6	55	11	50	13	60	28	17
1934												
Slaughter	335	14	19	44	4	55	12	54	16	61	29	27
This study	338	14	15	46	6	59	11	61	14	63	33	16

Table 1 (Cont'd)

Comparison of Estimates of Wages and Salaries in Kansas by Industry, 1929-1939
(millions of dollars)

	Total wages and salaries	Agriculture	Mining	Manufacturing	Construction	Transportation	Communication power and gas	Trade	Finance	Government	Service	Miscellaneous
1935												
Slaughter	369	14	20	51	7	62	12	57	16	69	32	29
This study	362	15	18	45	8	62	12	66	14	68	37	17
1939												
Department of Commerce	396	16	20	58	12	61	12	64	15	79	33	26
This study	403	15	20	52	12	62	14	69	17	88	35	19
Department of Commerce estimates as a percentage of this study	96	98	106	103	97	84	62	96	91	104	86	117
Slaughter estimates as a percentage of this study	100	109	97	89	119	92	92	96	118	102	93	157

Source: John A. Slaughter, Income Received in the Various States, 1929-1935, pp. 67-74. Appendix Table 2 and 15.

Differences in estimated total incomes are very small indeed. (Figure 1). Although variation from year to year is clearly evident, it is interesting to note that the total income accounted for by the present study is within 2 per cent of that reported by both Slaughter and the Department of Commerce for the years covered by their estimates (Table 2). Net income of farm operators and property income are difficult to compare because of differences in treatment. The close agreement of the totals, however, would seem to indicate that the differences are generally in manner of presentation rather than in the quantitative measurement of income. For example, net rents received by landlords living on farms are classified as property income in the state estimates of the National Income Division, but as net income of farm operators in its national estimates and in the present study. Total income is unaffected by this difference in classification per se. Adjustments for changes in value of inventory cause differences in the income attributed to a given year but tend to cancel out over a period of time. State estimates of the Department of Agriculture do not include such adjustments, since "Estimates not including inventory adjustments are valid for most comparisons."[50] There is a difference of only 3 per cent between this study and the National Income Division in the estimate of net income of farm operators for 1929 when computed according to the same concept and methodology.[51]

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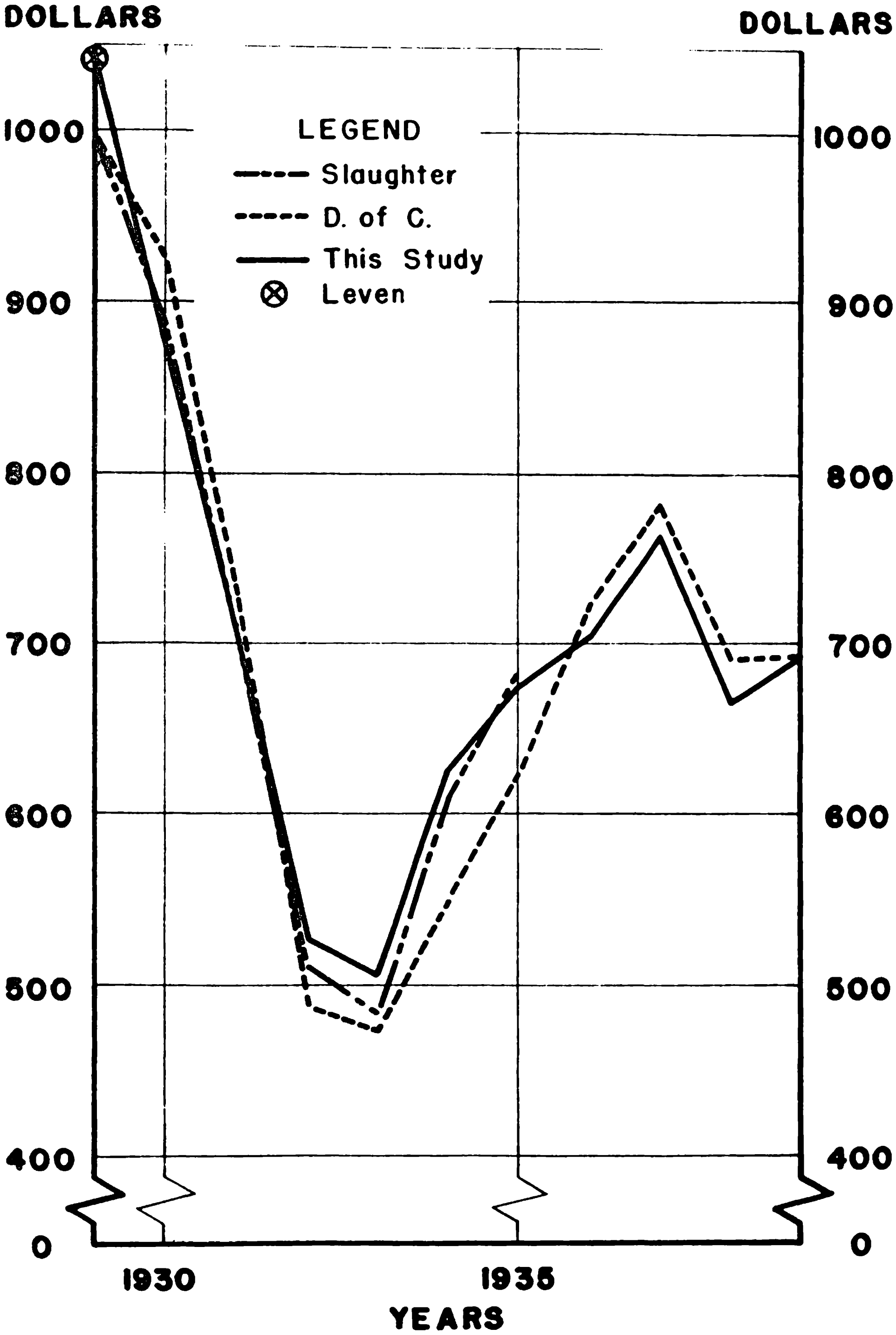
[50] United States Department of Agriculture, Bureau of Agricultural Economics, "Net Income and Production Expenses of Farm Operators by States," Section 1, Part VI, Income Parity for Agriculture, (Preliminary), p. 2.

[51] Letter to the writer from Charles F. Schwartz, Assistant Chief of the National Income Division, Department of Commerce, dated December 7, 1953.

Figure I

COMPARISON OF ESTIMATES OF TOTAL INCOME IN KANSAS, 1929-1939



Source: Table 2

Table 2

Comparison of Estimates of Total Income and Major Components in Kansas, 1929-1939
(millions of dollars)

	Total income	Wages and salaries	Total entrepreneurial income	Entrepreneurial income except that of farm operators	Net income of farm operators	Property income	Other income
1929							
Department of Commerce	997	535	307	104	203	139	16
Slaughter	996	560	325	103	222	64	47
This study	1,042	572	364	105	259	94	12
Leven	1,042	—	—	—	265	—	—
1930							
Department of Commerce	928	—	—	—	—	—	—
Slaughter	886	534	262	110	152	42	39
This study	883	525	259	95	164	88	12
1931							
Department of Commerce	730	—	—	—	—	—	—
Slaughter	711	435	195	95	100	45	35
This study	711	436	184	83	101	78	13
1932							
Department of Commerce	487	—	—	—	—	—	—
Slaughter	515	342	110	78	32	32	31
This study	528	334	123	65	58	57	14

Table 2 (Cont'd)

Comparison of Estimates of Total Income and Major Components in Kansas, 1929-1939
(millions of dollars)

	Total income	Wages and salaries	Total Entrepreneurial income	Entrepreneurial income except that of farm operators	Net income of farm operators	Property income	Other income
1933							
Department of Commerce	474	298	87	51	35	67	27
Slaughter	482	306	106	71	35	29	41
This study	506	309	130	59	72	49	17
1934							
Department of Commerce	549	—	—	—	—	—	—
Slaughter	609	334	146	74	72	38	89
This study	623	337	194	65	129	66	26
1935							
Department of Commerce	622	—	—	—	—	—	—
Slaughter	686	369	178	81	97	40	98
This study	678	361	227	71	156	70	21
1936							
Department of Commerce	724	—	—	—	—	—	—
This study	706	—	—	—	—	—	—

Table 2 (Concluded)

Comparison of Estimates of Total Income and Major Components in Kansas, 1929-1939
(millions of dollars)

	Total income	Wages and salaries	Total entrepreneurial income	Entrepreneurial income except that of farm operators	Net income of farm operators	Property income	Other income
1937							
Department of Commerce	781	--	--	--	--	--	--
This study	763	--	--	--	--	--	--
1938							
Department of Commerce	690	--	--	--	--	--	--
This study	665	--	--	--	--	--	--
1939							
Department of Commerce	692	392	165	82	83	85	50
This study	691	402	183	72	111	78	28
Department of Commerce estimates as a percentage of this study	98	96	83	100	75	132	163
Slaughter's estimates as a percentage of this study	98	100	89	113	76	58	330

Source: Appendix Tables 1, 9, and 15. Robert E. Graham, Jr., "State Income Payments in 1951," *Survey of Current Business*, August, 1952, p. 16; John A. Slaughter, *Income Received in the Various States, 1929-1935*, pp. 28 ff; Maurice Leven, Harold G. Moulton and Clark Warburton, *America's Capacity to Consume*, pp. 172-174.

For the years 1929, 1933, and 1939, the Department of Commerce estimates of total entrepreneurial income average only 83 per cent of the present study. This is the result of the difference in handling of farm income, since all other entrepreneurial income averages 100 per cent of the original estimates. The relatively low net income of farm operators (averaging 73 per cent of the present estimates) is counterbalanced by the larger property income, averaging 132 per cent of the present estimates. Differences in handling the miscellany under "Other income", which averages 163 per cent of the similar category in the original estimates, represent a further balancing factor.

While Slaughter's concept of net income of farm operators is closer in some respects to the present study--for example, he does not include changes in value of inventories--any attempt at direct comparisons other than of wages and salaries or total income is largely unrewarding. Although wages and salaries are in almost perfect agreement over the period 1929-1935, total entrepreneurial income averages 89 per cent, net income of farm operators 76 per cent, and property income only 58 per cent of this study. One might wonder how total income could be so close in view of the disparity between the subtotals. As in the case of the Department of Commerce estimates, the answer lies to a large extent in the reporting of the same incomes under different classifications. Slaughter, however, does consistently estimate larger nonfarm entrepreneurial income than either of the other studies. Aggregate income attributed to this category was 13 per cent larger than estimated in the present study. Thus, his total entrepreneurial income is much closer to the present estimates than his net income of farm operators. The two estimates of farm income are quite close together until 1932, after which they get ever farther apart.

Part of this divergence is due to the fact that Slaughter includes governmental rental and benefit payments to farmers under "Other income," while in the present study it is included under "Net income of farm operators." Slaughter's property income is far below either of the other studies. Total income, however, remains very close to the other estimates because his "Other income" category includes an allowance for imputed interest on mortgages on owned homes, net rent of rented homes, and relief payments—government and private, work and direct—large enough to compensate for the areas in which his estimates are relatively low.

CHAPTER III

ANALYSIS OF ECONOMIC CHANGE IN KANSAS

None of the histories or annals of the state of Kansas adequately covers the economic changes which took place between 1900 and 1929. The periods of exploration, settlement, civil strife, and post-Civil War development are well chronicled by fiction and nonfiction. Apparently, however, the writers of the time saw little of general interest in the prosaic gradual changes accompanying the development of the resources of the state—resources which were presumed by many to have been almost fully discovered by 1900. Another reason for the paucity of economic literature covering Kansas during this period is the relatively favorable economic position of the state between 1900 and World War I. Analysis and discussion of economic forces is typical of times of depression and crisis, such as the Populist Movement of the nineties. During the mid-nineties, the nation as well as Kansas experienced deep depression with its resulting unrest. The year 1897 brought a revival of business in the nation as a whole, and prosperity characterized business conditions generally for the next ten years.[52] In prosperity or depression, per capita income payments in Kansas held quite close to those for the United States for most years and exceeded the national figure in 1914 and from 1916 through 1921.

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[52] Willard Long Thorp, Business Annals, pp. 137-140.

According to Frederick C. Mills, the advancing real worth of raw materials and the declining real worth (per unit) of manufactured goods was one of the most conspicuous economic changes occurring in the United States between the opening of the twentieth century and the outbreak of World War I. Among raw materials, the gains in real worth per unit were greatest for farm crops, whose purchasing power increased at the notable rate of 1.5 per cent per year. Among the factors responsible for this phenomenon were the secular change in the value of money, technical improvements in processes of fabrication, and the widening of markets. All of these developments worked in the same direction—to cheapen products of manufacturing in relation to their raw ingredients.[53]

Approached from another angle, the enhanced relative position of agriculture resulted from the fact that agricultural production was increasing at a rate slightly below that at which population was growing, while nonagricultural commodities were increasing at a rate approximately two and one half times as high as the rate of population increase. Naturally, wants were expanding more rapidly for nonagricultural commodities also, but not with sufficient rapidity to enable this swelling mass of goods to be marketed without material reductions in the asking price in terms of real goods.[54] Over-all, farmers as a group gained some 2.2 per cent per year in total purchasing power. This gain was composed of approximately 1.7 per cent per year increase in volume of goods produced and about 0.5 per cent annual gain in the real value, per unit, of these goods. Both of these factors—one based on physical contributions, the other on favorable market relations—contributed to the gain of agricultural producers.[55]

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[53] Frederick C. Mills, Economic Tendencies in the United States, p. 82.

[54] *Ibid.*, p. 83.

The fact that farmers were enjoying an increase in the real worth of their products does not mean that their purchasing power was increasing faster than other economic groups. On the contrary, the increase in their aggregate command over goods on an annual basis was the lowest of all producing groups. While farmers were unique in having products with an increasing real purchasing power per unit, the increase in physical volume of agricultural production was relatively low, with the result that the increase in their aggregate command over goods was 2.2 per cent as compared with 4.1 per cent for producers of raw minerals and 3.1 per cent for manufactured goods.[56] In any event, real purchasing power was increasing for the farm group and such a state as Kansas with an agricultural base could not help but benefit if weather conditions were favorable.

Figure 2, which plots farm income, other income, and total income on a semi-logarithmic scale to emphasize differences in rates of change, shows clearly that aggregate farm income was increasing at a much slower rate than other income or total income during this period (Table 3). Upon the basis of this fact, it would be possible to arrive

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[55] Ibid., p. 171.

[56] Ibid., p. 169.

Net Income of Farm Operators, All Other Income, and Total Income, Actual and Trend,[a] Kansas, 1900-1918
(millions of dollars)

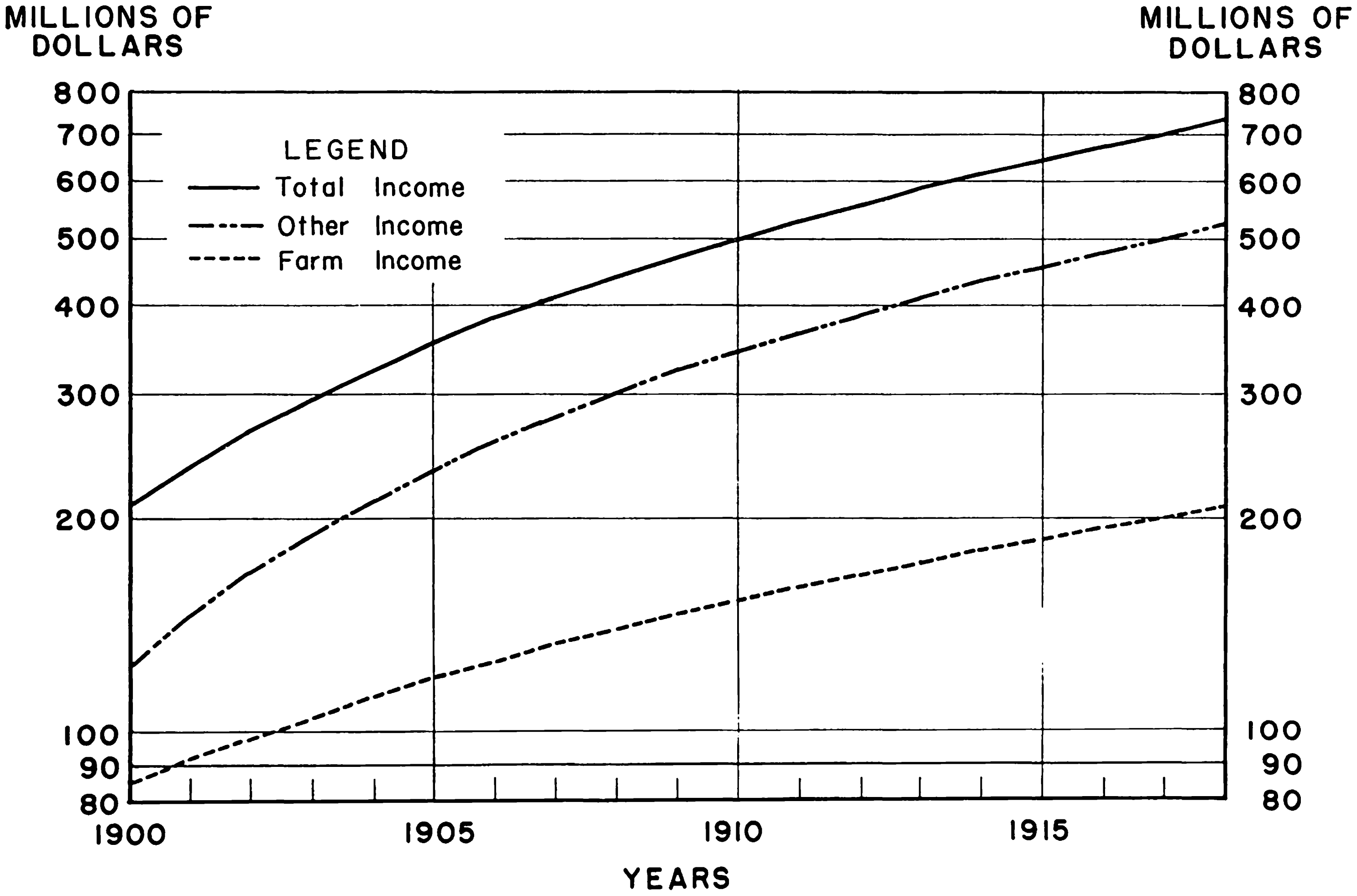
	Net income of farm operators		All other income		Total income	
	Actual	Trend	Actual	Trend	Actual	Trend
1900	87.9	84.6	170.4	123.6	258.3	208.2
1901	115.0	91.4	186.6	145.7	301.6	237.1
1902	99.8	98.3	193.4	167.7	293.2	266.0
1903	113.2	105.1	211.9	189.8	325.1	294.9
1904	118.8	111.9	221.6	211.9	340.4	323.8
1905	122.3	118.7	242.2	234.0	364.5	352.7
1906	119.5	125.5	250.1	256.1	369.6	381.6
1907	138.2	132.4	273.3	278.8	411.5	411.2
1908	142.3	139.2	268.6	300.2	410.9	439.4
1909	160.9	146.0	304.8	322.3	465.7	468.3
1910	138.6	152.8	321.4	344.4	460.0	497.2
1911	127.0	159.6	310.8	366.5	437.8	526.1
1912	116.5	166.5	306.6	388.5	423.1	555.0
1913	142.6	173.3	343.9	410.6	486.5	583.9
1914	169.9	180.1	362.6	432.7	532.5	612.8
1915	146.7	186.9	369.2	454.8	515.9	641.7
1916	221.6	193.7	439.2	476.9	660.8	670.6
1917	195.8	200.6	587.7	498.9	783.5	699.5
1918	297.7	207.4	759.4	521.0	1,057.1	728.4

[a] Computed by least squares. Net income of farm operators $Y_c = 146.00 + 6.82X$; all other income $Y_c = 322.30 + 22.08X$. Origin = 1909. X = 1 year.

Source: Appendix Tables 1 and 9.

Figure 2

TREND OF NET INCOME OF FARM OPERATORS, ALL OTHER INCOME, AND TOTAL INCOME, 1900-1918



Source: Table 3

at several questionable conclusions. One could cite these data as evidence that agriculture was of decreasing importance to the Kansas economy, since nonfarm income was able to make such sizeable relative gains. As the discussion proceeds, it will be shown that agricultural income—in the accounting sense of net income of farm operators—has been a steadily decreasing percentage of income from 1900 to date. The decline in agricultural income was much more drastic between 1919 and 1940 than was nonfarm income, while aggregate agricultural income did not keep pace with the growth of all other income between 1941 and 1952.

Surely it should not be concluded from these facts that the Kansas economy has not been closely tied to agriculture. Discussion of the extent, nature, and implications of this relationship will recur frequently, because it is one of the most interesting questions involved in the present study. Aggregates, however, are apt to be misleading because they cover up changes in total population and in the composition and industrial distribution of the gainfully employed. Therefore, most of the subsequent analysis will be on a per capita basis, although the relative movement of the totals should be kept constantly in mind.

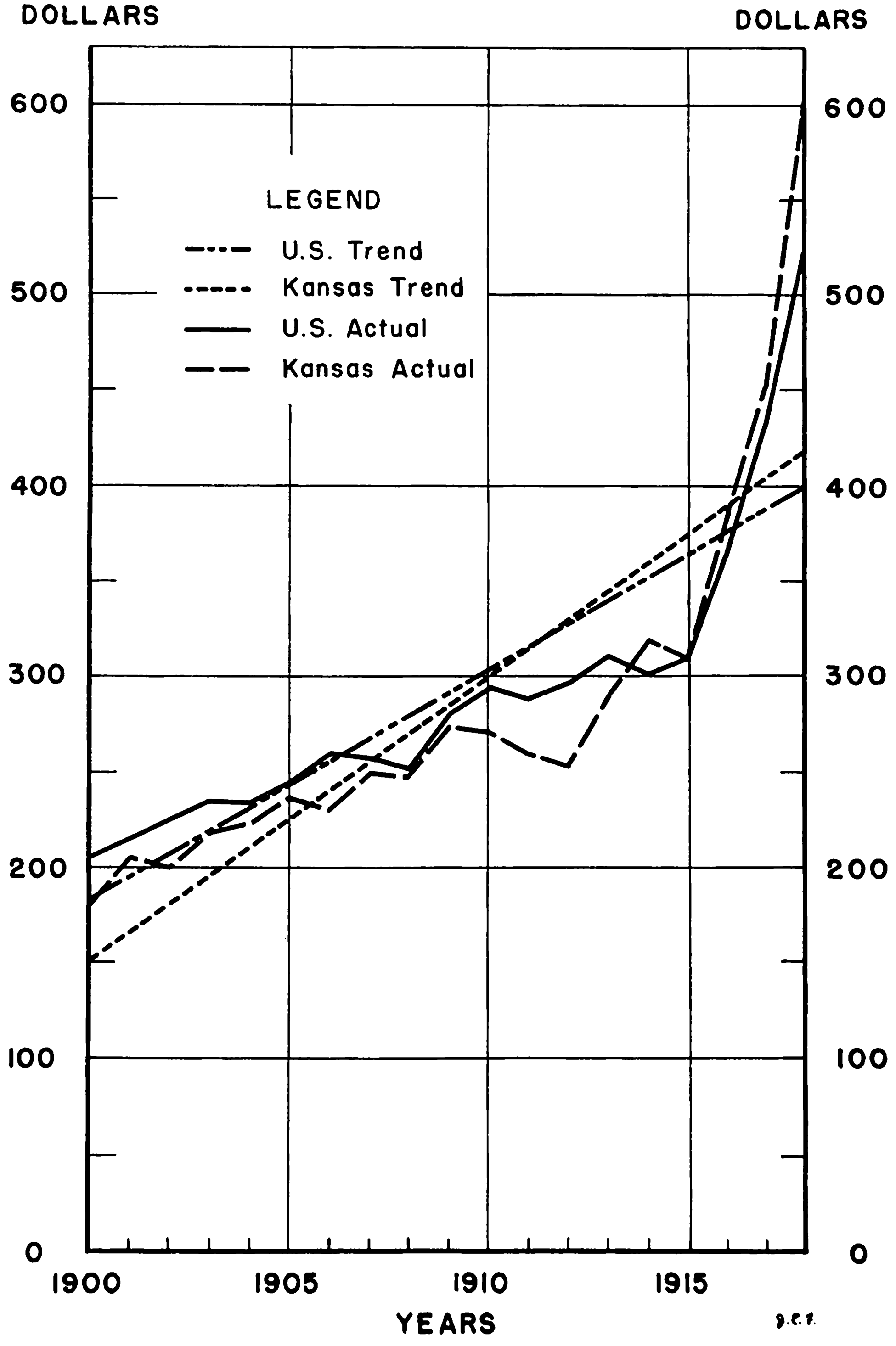
KANSAS VIS-A-VIS THE UNITED STATES

1900-1919

Figure 3 and Table 4 indicate that Kansas per capita incomes increased more rapidly than those of the United States between 1900 and

Figure 3

ACTUAL AND COMPUTED PER CAPITA INCOME PAYMENTS, KANSAS AND UNITED STATES, 1900 - 1918



Source: Table 4

Table 4

Actual and Computed[a] Per Capita Income Payments, Kansas and United States, 1900-1918 (in dollars)

Year	Kansas Actual per capita income	Kansas Computed per capita income	United States Actual per capita income	United States Computed per capita income
1900	$ 179	$ 150	$ 205	$ 182
1901	205	165	214	194
1902	200	180	224	201
1903	218	195	234	218
1904	222	210	233	230
1905	236	225	245	242
1906	229	240	260	254
1907	249	255	257	267
1908	248	270	252	279
1909	273	284	280	291
1910	271	299	293	303
1911	260	314	287	315
1912	254	329	296	327
1913	289	344	310	339
1914	318	359	301	351
1915	308	374	309	363
1916	385	389	364	376
1917	451	404	432	387
1918	609	418	527	399

[a] Computed by least squares. United States $Y_c = 290.68 + 12.07X$; Kansas $Y_c = 284.42 + 14.89X$. Origin = 1909. X = 1 year.

Source: Robert F. Martin, National Income in the United States, 1799-1938, pp. 21, 67; United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1953, p. 13; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 1.

1918. The state made rather steady gains on the nation in per capita income through 1909. The decline in income in 1906 was not an actual decline in dollar value of total payments received, but an apparent decline due to an increase in population of the state at a faster rate than income. As a matter of fact, it is only as income increases faster than population that gains in per capita income can be made.

The record indicates that during the first two decades of the century this situation existed in both Kansas and the United States, but that Kansas was in a relatively more favorable position than the nation generally. The years 1910-1913 were disappointing due to winter-killing of wheat in 1910 as well as a decided deficiency of precipitation which began in 1910 and continued until the early months of 1918—with an interlude in 1915, one of the wettest years in the history of the state. The year 1914, although included among the dry years, had sufficient moisture at the proper times to produce a record-breaking wheat crop of some 181 million bushels. This crop—unusually valuable to the Kansas farmers because of the rapidly increasing price which skyrocketed from around 70 cents per bushel in July to $1.01 in December—was largely responsible for bringing the per capita income in Kansas above the national average for the first time. The value of the one crop, wheat, sold in 1914 was 137.1 million dollars as compared with 62.5 million in the previous year. In 1915, Kansas per capita income was approximately equal to the United States average and exceeded it for each subsequent year in the period covered by this subsection.

From a cursory examination of the relatively favorable position of agriculture in this early period, its depressed condition during the twenties and thirties, and its resurgence during and after World War II, it might be tentatively inferred that there has been a direct and causal relationship between the profitability of agriculture and all other income in the state. Since the bulk of the analysis is in per capita terms, similar computations for farm and nonfarm income were urgently needed in order to shed light upon the above plausible hypothesis. Such estimates could not be made directly, however, since official estimates of farm population by states are not available prior to 1920.(57) However, by assuming that population shifts from the farm to the nonfarm category were proportional to changes in the ratios of agricultural workers to total workers among the gainfully employed, it was possible to extrapolate the 1920 estimate of Kansas farm population to 1900. By a similar process, United States data for 1910 were extended to 1900. Census reports indicate that Kansans engaged in agricultural pursuits comprised 53.4 per cent of those gainfully occupied in 1900, 44.1 per cent in 1910, and 37.3 per cent in 1920. Comparable figures for the United States were 35.6 in 1900, 33.2 in 1910, and 26.3 in 1920.(58) The meaning of these percentages is not clear at first glance, but when the later years are compared with 1900, differences in the rate of industrialization are readily apparent. For Kansas, the proportion of the gainfully occupied working in agriculture dropped more than 30 per cent between 1900 and 1920. Meanwhile,

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[57] United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-1950, and for the United States, 1910-50, November, 1953.

[58] United States Department of Commerce and Labor, Bureau of the Census, Occupations at the Twelfth Census, pp. 7 ff; United States Department of Commerce, Bureau of the Census, Thirteenth Census of the United States, 1910, Population, Vol. IV, pp. 91 ff; Fourteenth Census of the United States, 1920, Population, Vol. IV, pp. 35 ff.

comparable employment in the United States was only 24 per cent below the figure for 1900. The assumption that farm population declined at the same rate as the proportion of the gainfully employed working in agriculture is, of course, very rough. Several other factors are undoubtedly involved such as increased mechanization, increased participation of women in the working force, changes in birth rates, and so forth.

Nevertheless, even this crude approximation permits some insight otherwise unobtainable. When farm income for Kansas and the United States is divided by their respective populations to give an undifferentiated per capita figure, the rate of increase appears to have been about the same in both geographic areas. When these incomes are divided only by the farm population, however, it is apparent that Kansas net agricultural income per farm resident was increasing much more rapidly than was true throughout the nation as a whole. The average increase in per capita farm income over the twenty-year period was 106 per cent in Kansas compared with 74 per cent in the United States (Table 5). Nonfarm income, on the other hand, when divided by nonfarm population, is shown to have been increasing at the average rate for the nation. If calculated by use of total population data, however, it would appear to have been increasing much more rapidly than in the United States.

By means of a partial equilibrium analysis, it is possible to discover the relative contributions of changes in the farm and nonfarm components to the total difference between Kansas and the United States rates of change. For example, the average realized per capita income

Table 5

Per Capita Income of Farm and Nonfarm Population, Kansas and United States, 1900-1919
(in dollars)

	Kansas				United States			
	Per capita farm income	Index	Per capita nonfarm income	Index	Per capita farm income	Index	Per capita nonfarm income	Index
1900	$ 100	100	$ 294	100	$ 76	100	$ 282	100
1901	133	133	309	105	78	103	294	104
1902	118	118	313	106	80	105	308	109
1903	134	134	330	112	81	107	321	114
1904	139	139	326	111	85	112	318	113
1905	145	145	346	118	83	109	337	120
1906	138	138	335	114	88	116	356	126
1907	159	159	350	119	92	121	366	130
1908	166	166	335	114	100	132	328	116
1909	186	186	361	123	118	155	359	127
1910	165	165	376	128	123	162	377	134
1911	154	154	360	122	113	149	378	134
1912	145	145	353	120	126	166	383	136
1913	179	179	387	132	120	158	405	144
1914	219	219	405	138	119	157	390	138
1915	192	192	407	138	130	171	395	140
1916	287	287	465	158	160	211	460	163
1917	255	255	607	206	226	297	527	187

Table 5 (Concluded)

Per Capita Income of Farm and Nonfarm Population, Kansas and United States, 1900-1919
(in dollars)

	Kansas				United States			
	Per capita farm income	Index	Per capita nonfarm income	Index	Per capita farm income	Index	Per capita nonfarm income	Index
1918	$ 395	395	$ 774	263	$ 283	372	$ 635	225
1919	596	596	858	292	310	408	694	246
Average per capita income for period	$ 206		$ 421		$ 132		$ 402	
Average income as percentage of base year	206		143		174		143	

Source: Robert F. Martin, National Income in the United States, 1799-1938, p. 65; United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-1950; United States Department of Commerce and Labor, Bureau of the Census, Occupations at the Twelfth Census, pp. 7 ff; United States Department of Commerce, Bureau of the Census, Thirteenth Census of the United States, 1910, Population, Vol. IV, pp. 91 ff; Fourteenth Census of the United States, 1920, Population, Vol. IV, pp. 35 ff; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 9.

in Kansas for the period 1901-1919, was 176 per cent of the similar figure for 1900. The comparable figure obtained by projecting the Kansas per capita income for 1900 to successive years by means of an index of United States per capita income (1900 = 100) is 166 per cent. In other words, if Kansas per capita income had increased at a rate identical with the United States, the increase would have been ten percentage points (13 per cent) below that realized (Table 6).

To discover which components of Kansas income were responsible for the difference in rates of change, three hypothetical incomes were utilized. "Hypothetical Income A" indicates what Kansas income might have been with a combination of farm income as actually received and with nonfarm income changing at the same rate as the nation. "Hypothetical Income B" indicates what Kansas income might have been with both components following the national pattern. It would appear from this analysis that, of the total difference of ten percentage points in average increase between Kansas and the United States, eight points—that is, the difference between 166 and 174—were attributable to the relative gain in Kansas agriculture; the other two points were gained due to differences in the state's rate of nonagricultural growth.

Of course, such an analysis is much too simple to measure adequately what was actually occurring in the economic base of the state. The fact that per capita incomes in the nonfarm segment of the population were not gaining as rapidly as in the farm segment offers very little usable information unless changes in the size of the farm and nonfarm populations were taking place at exactly the same rate in the state as in the nation. From available data it can be safely assumed

Table 6

Comparison of Realized Kansas Per Capita Income with Hypothetical Per Capita Incomes Based on United States Indexes, 1900-1919

Year	Hypothetical net farm income	Realized net farm income	Realized income as percentage of hypothetical	Hypothetical non-farm income	Realized nonfarm income	Realized income as percentage of hypothetical	Hypothetical Income A (realized net farm and assumed nonfarm)	Hypothetical Income B (both components assumed)	Hypothetical Income C (United States rates of change in farm population)	Realized total per capita income
1900	$100	$100	100	$294	$294	100	$179	$179	$179	$179
1901	103	133	129	306	309	101	204	186	204	205
1902	105	118	112	320	313	98	203	196	198	200
1903	107	134	125	335	330	99	221	205	215	218
1904	112	139	124	332	326	98	224	209	217	222
1905	109	145	133	353	346	98	239	219	229	236
1906	116	138	119	370	335	91	245	234	222	229
1907	121	159	131	382	350	92	265	245	241	249
1908	132	166	126	341	335	98	251	233	239	248
1909	155	186	120	373	361	97	278	263	262	273
1910	162	165	102	394	376	95	281	279	258	271
1911	149	154	103	394	360	91	277	274	247	260
1912	166	145	87	400	353	88	278	288	240	254
1913	158	179	113	423	387	91	308	298	278	289
1914	157	219	139	406	405	100	319	290	307	318

Table 6 (Concluded)

Comparison of Realized Kansas Per Capita Income with Hypothetical Per Capita Incomes Based on United States Indexes, 1900-1919

Year	Hypothetical net farm income	Realized net farm income	Realized income as percentage of hypothetical	Hypothetical nonfarm income	Realized nonfarm income	Realized income as percentage of hypothetical	Hypothetical Income A (realized net farm and assumed nonfarm)	Hypothetical Income B (both components assumed)	Hypothetical Income C (United States rates of change in farm population)	Realized total per capita income
1915	$171	$192	112	$412	$407	99	$311	$302	$295	$308
1916	211	287	136	479	465	97	393	358	374	385
1917	297	255	86	550	607	110	420	438	429	451
1918	372	395	106	662	774	117	546	536	588	609
1919	408	596	146	723	858	119	669	588	733	746
Average for the period 1900-1919	$171	$206	120	$412	$415	101	$306	$291	$298	$308
Average income 1901-1919 as percentage of 1900	174	206	--	143	143	--	174	166	170	176

Source: United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-50; United States Department of Commerce and Labor, Bureau of the Census, Occupations at the Twelfth Census, pp. 7 ff; United States Department of Commerce, Bureau of the Census, Thirteenth Census of the United States, 1910, Population, Vol. IV, pp. 91 ff; Tables 4 and 5.

that this was not the case. Kansas farm population was decreasing at a much faster rate than in the United States generally. "Hypothetical Income C" indicates what total per capita income would have been if the component payments had remained the same but farm and nonfarm populations had followed the national rates of change instead of the ones actually experienced. In this event, the increase over the base period would have averaged 70 per cent instead of the 76 per cent shown by the present estimates. Thus, by use of the economist's favorite tool, ceteris paribus, it can be shown that total per capita income was increased by six percentage points (9 per cent) due to a more rapid industrialization and/or a greater-than-average decrease in farm population.

Since it is obvious that all other conditions were not remaining equal while per capita farm and nonfarm incomes underwent change at varying rates and the process of industrialization proceeded by uneven advances, it is impossible to determine just what percentage of the total change was attributable to each factor. It should be a net gain to understanding, however, to be aware of the three main forces and to have some measure of their relative importance.

Another clear indication of the fact that industrialization was making relatively faster progress in Kansas than in the United States during this period can be obtained from Tables 7 and 8. Total annual wages and salaries as well as employee compensation in manufacturing, trade, and mining were divided by total population to give yearly wage payments for each man, woman, and child for the various years. It is readily apparent that per capita payments of wages and salaries were

Table 7

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas, 1900-1919
(in dollars)

Year	All wages and salaries		Wages and salaries in manufacturing		Wages and salaries in trade		Wages and salaries in mining	
	Per capita	Index	Per capita	Index	Per capita	Index	Per capita	Index
1900	$ 8.09	100	$ 1.12	100	$ 1.69	100	$ .54	100
1901	8.75	108	1.21	108	1.98	117	.46	85
1902	9.21	114	1.41	126	1.99	118	.45	83
1903	10.04	124	1.52	136	2.22	131	.54	100
1904	10.29	127	1.47	131	2.25	133	.40	74
1905	11.32	140	1.66	148	2.56	151	.72	133
1906	11.25	139	1.74	155	2.54	150	.63	117
1907	12.12	150	1.85	165	2.68	159	.79	146
1908	11.54	143	1.61	144	2.46	146	.65	120
1909	12.89	159	1.95	174	2.74	162	.62	115
1910	13.89	172	2.21	197	2.71	160	.57	106
1911	13.49	167	2.14	191	2.62	155	.65	120
1912	13.58	168	2.28	204	2.43	144	.75	139
1913	14.94	185	2.40	214	2.97	176	.90	167
1914	15.80	195	2.12	189	3.51	208	.96	178
1915	16.22	200	2.18	195	3.44	204	.85	157
1916	19.00	235	3.03	271	3.97	235	1.16	215
1917	23.09	285	4.19	374	4.36	258	1.29	239
1918	29.45	364	5.16	461	5.37	318	1.57	291
1919	34.06	421	5.58	498	6.51	385	1.66	307
Average payment 1900-1919	$ 14.95		$ 2.34		$ 3.05		$ 0.81	
Average payment 1901-1919 as percentage of 1900	189		241		185		152	

Source: Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 2.

Table 8

Annual Per Capita Wage and Salary Payments by Selected Industries, United States, 1900-1919 (in dollars)

	All wages and salaries		Wages and salaries in manufacturing		Wages and salaries in trade		Wages and salaries in mining	
Year	Per capita	Index	Per capita	Index	Per capita	Index	Per capita	Index
1900	$ 12.25	100	$ 3.05	100	$ 2.29	100	$ .45	100
1901	12.89	105	3.28	108	2.38	104	.52	116
1902	13.63	111	3.63	119	2.57	112	.47	104
1903	14.41	118	3.82	125	2.68	117	.68	151
1904	14.40	118	3.52	115	2.74	120	.62	138
1905	15.45	126	4.01	131	3.01	131	.67	149
1906	16.36	134	4.25	139	3.28	143	.69	153
1907	16.79	137	4.51	148	3.30	144	.87	193
1908	15.07	123	3.70	121	2.92	128	.64	142
1909	16.91	138	4.40	144	3.27	143	.71	158
1910	17.68	144	4.88	160	3.34	146	.77	171
1911	17.64	144	4.77	156	3.33	145	.77	171
1912	18.18	148	5.21	171	3.20	140	.82	182
1913	19.32	158	5.46	179	3.54	155	.89	198
1914	18.67	152	5.01	164	3.80	166	.76	169
1915	19.12	156	5.28	173	3.87	169	.75	167
1916	22.10	180	6.92	227	4.20	183	.93	207
1917	26.02	212	8.57	281	4.62	202	1.16	258
1918	33.26	272	10.59	347	5.12	224	1.42	316
1919	35.35	289	13.65	448	5.17	226	1.41	313
Average payment 1900-1919	$ 18.78		$ 5.43		$ 3.43		$ .80	
Average payment 1900-1919 as percentage of 1900	156		182		152		182	

Source: Robert F. Martin, National Income in the United States, 1799-1938, p. 28; United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1953, p. 13.

increasing much more rapidly in Kansas, particularly in manufacturing.

It has previously been noted that total Kansas per capita income, both actual and computed, was below the United States average in 1900 but above it during the last few years of the second decade. How could Kansas have been below the national per capita income when per capita incomes in the state for both farm and nonfarm populations were generally above their counterparts in the nation (see Table 5). The answer to this enigma apparently lies in the relatively larger farm population with per capita incomes well below the nonfarm sector. Any gain in per capita income relative to the United States would presumably come from an increase in the agricultural component, in the nonagricultural component, or from a more rapid movement from the farms. In previous paragraphs it has been demonstrated mathematically that the relatively faster movement from the farms was a potent force in raising total per capita incomes. The decreasing importance of agriculture as a direct source of livelihood in Kansas was evidently a very steady phenomenon, since more than 17 of the total 30 per cent decrease in agricultural employment occurred between 1900 and 1910. In the United States, however, most of the change was concentrated in the war decade, since less than 7 of the total drop of 26 per cent occurred between 1900 and 1910.

In addition to the above evidence, ratios of agricultural income to total income in Kansas and in the United States can be used to good advantage to show the same trend. Table 9 presents data indicating what percentage net farm income comprised of total income each year in state and nation. The indexes make it readily apparent that

Table 9

Relative Importance of Net Farm Income in Kansas and United States, 1900-1919

Year	Kansas Farm income as percentage of total income	Kansas Index of percentages	United States Farm income as percentage of total income	United States Index of percentages	Ratio of relative importance of Kansas farm income to U.S. farm income
1900	34.0	100	13.8	100	2.46
1901	38.1	112	13.6	99	2.80
1902	34.0	100	13.2	96	2.58
1903	34.8	102	12.8	93	2.72
1904	34.9	103	13.3	96	2.62
1905	33.6	99	12.2	88	2.75
1906	32.3	95	12.2	88	2.65
1907	33.6	99	12.2	88	2.75
1908	34.6	102	14.3	104	2.42
1909	34.5	101	15.1	109	2.28
1910	30.1	89	14.9	108	2.02
1911	29.0	85	13.5	98	2.15
1912	27.5	81	14.4	104	1.91
1913	29.3	86	12.9	93	2.27
1914	31.9	94	13.0	94	2.45
1915	28.4	84	13.6	99	2.09
1916	33.5	99	14.1	102	2.38
1917	24.9	73	16.5	120	1.51
1918	28.2	83	16.4	119	1.72
1919	34.1	100	15.9	115	2.14
Average ratio					2.23

Source: Robert F. Martin, National Income in the United States, 1799-1938, pp. 21, 65, 87; Table 24.

agriculture was actually increasing in relative importance in the United States at the same time that it was a decreasing component of total income in the state of Kansas. The ratio at the right is a very rough indicator of the relative importance of agriculture to the Kansas economy as compared with the national economy. It is rough because, almost certainly, more than a proportionately higher percentage of the state's business is geared to agriculture than is the case in the nation as a whole. In any event, whatever the nature of this indeterminate multiple, it was decreasing between 1900 and 1919.

It is believed that the above analysis assists in an understanding of economic events as they affected Kansas during the first two decades of the century. The year 1919 found Kansas achieving its highest per capita income up to that time. Such dollar income was not to be reached again by the state until 1942. The United States surpassed its peak of 1920 in 1929, but Kansas, in that year, was $186 below its per capita income of 1919. Surely, the forces at work in such a change of trend as this are worthy of very careful analysis to the extent that they can be discovered or surmised.

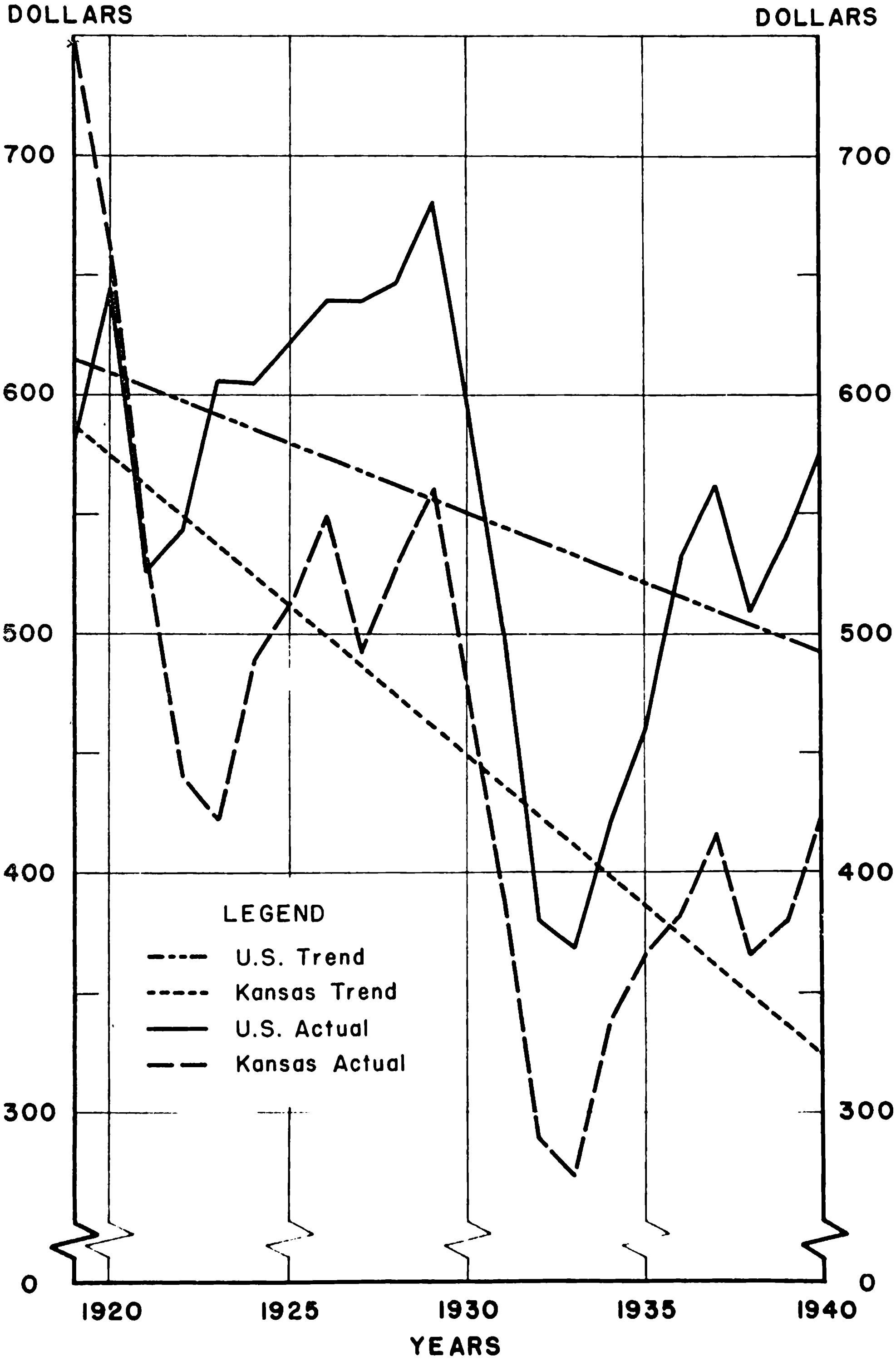
The Twenties

Kansas prosperity, abetted by favorable market relations in agriculture and accompanied by rapid movement off the farms to more highly paid jobs in industry and trade, reached its peak in 1919, one year ahead of the United States. After 1919, per capita and total income declined sharply in the state in contrast with the still climbing national income because of the difference in relative importance of agricultural income in Kansas vis-à-vis the United States. Kansas per capita net farm income dropped from $596 to $336 in the one year. United States per capita net farm income dropped from $310 to $217. Kansas nonfarm income continued to climb through 1920 but not as rapidly as the United States. Kansas figures for 1919 and 1920 in this category were $858 and $887 respectively. Comparable incomes to the nonfarm population in the United States were $694 in 1919 and $824 in 1920. The extent of the decline in per capita income can be clearly seen in Figure 4. By 1920, Kansas had lost almost all of its lead in per capita income recorded in the previous years (Table 10). Kansas per capita income slid down along with United States income until 1921. After this date, the nation experienced either increases or plateaus in income. Kansas, meanwhile, suffered decreases in per capita income through 1923, after which time recovery began, but never at a sufficiently rapid rate to regain its relative position of 1919.

The plight of agriculture during the ensuing two decades has been well documented. While a comprehensive explanation of the exogenous forces bringing about this relatively unfavorable position will not be attempted here, a few of the most important will be mentioned. Beginning around 1913, productive techniques improved in agriculture and in the extraction of raw products, permitting exploitation of new territories. The output of many commodities was stimulated to rapid expansion by temporary war demands and a rapidly rising price level. The termination of the war checked these temporary demands. World-wide

Figure 4

ACTUAL AND COMPUTED PER CAPITA INCOME PAYMENTS, KANSAS AND UNITED STATES, 1919 - 1940



Source: Table 10

Table 10

Actual and Computed[a] Per Capita Income Payments, Kansas and United States, 1919-1940 (in dollars)

Year	Kansas per capita income	Computed per capita income	United States per capita income	Computed per capita income
1919	$ 746	$ 587	$ 580	$ 614
1920	657	575	644	608
1921	534	562	526	602
1922	441	550	543	597
1923	422	537	606	591
1924	488	525	605	585
1925	512	512	622	579
1926	549	500	639	573
1927	492	487	639	568
1928	529	475	647	562
1929	560	462	680	556
1930	475	450	596	550
1931	390	437	500	545
1932	289	424	380	539
1933	274	412	368	533
1934	337	399	420	527
1935	366	387	460	521
1936	381	374	531	516
1937	416	362	561	510
1938	366	349	509	504
1939	380	337	539	498
1940	423	324	575	492

[a] Computed by least squares. United States $Y_c = 553.18 + (-2.89)X$; Kansas $Y_c = 455.77 + (-6.26)X$; Origin = January 1, 1930. X = 6 months.

Source: Table 28

deflation of prices found agricultural producers unprepared or unable to adapt themselves to a new order through prompt liquidation, readjustment of costs, and adjustment of production to changed demand conditions.[59] In fact, Kansas farmers bought more machinery and plowed up more land in an effort to reduce their per unit costs of production, thus further aggravating the supply situation.

In seeking explanations for the rather sharp decline in the economic position of Kansas, one naturally wonders to what extent the state's economy was affected by unfavorable conditions in agriculture. Analysis of this problem was one of the favorite fields of research of the late Professor J. D. Morgan of the University of Kansas. His cogent observations were published in his book, Some Controlling Forces in Kansas Population Movements. In addition to the declining position of agriculture generally, Dr. Morgan believed that certain recent trends were of particular import to Kansas. Among these were the relatively stationary level of physical output of Kansas farms between 1910 and 1950 and the fact that the national consumption pattern shows little appreciable change in the number of pounds of food consumed per person, but a definite change in the types of food consumed. During recent decades, a decline in the consumption of starches and grain products and an increase in the consumption of fruits, vegetables, dairy products, and meats, has resulted in a decrease in demand for Kansas products relative to the demand for the production of such states as California, Texas, and Wisconsin. These states have benefited from the increase in the number of pounds of milk, citrus fruits, and fresh vegetables now consumed.[60] It is obvious that the trends as outlined above would tend to prevent Kansas agriculture from gaining relatively to the United States except during wartime with its attendant abnormal demand for the state's products.

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[59] Mills, op. cit., p. 542.

As a first step toward understanding what happened to Kansas per capita incomes, the aggregate was broken into its agricultural and nonagricultural components by dividing net income of farm operators by the farm population and all other income by the nonfarm population. This method, when followed for both Kansas and the United States, indicates how these two segments of the Kansas economy moved in comparison with the nation as a whole (Table 11). For these comparisons the year 1920 has been used as the base, primarily because farm income in Kansas was so abnormally high in 1919 that any comparisons based on that year would be biased downward; also because the official estimates of farm population start with 1920. From these computations it is apparent that the per capita income of the Kansas farm population—although fluctuations were not synchronized with national changes—averaged quite close to the decrease for the nation with a decline of 22 per cent in Kansas as compared with 18 per cent in the United States. Meanwhile, however, per capita nonagricultural income

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[60] J. D. Morgan, Some Controlling Forces in Kansas Population Movements, pp. 37, 56 ff.

Table 11

Per Capita Income of Farm and Nonfarm Population, Kansas and United States, 1920-1929 (in dollars)

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	Average per capita income for period	Average income as percentage of base year
Per capita farm income												
Kansas	$ 336	$ 265	$ 155	$ 123	$ 279	$ 288	$ 318	$ 249	$ 331	$ 365	$ 261	78
United States	$ 217	$ 125	$ 138	$ 166	$ 183	$ 215	$ 196	$ 193	$ 187	$ 188	$ 177	82
Kansas Index	100	81	47	38	86	89	97	75	99	109		
United States Index	100	58	64	76	84	99	90	89	86	87		
Per capita nonfarm income												
Kansas	$ 887	$ 729	$ 642	$ 624	$ 626	$ 664	$702	$ 646	$ 655	$ 686	$ 664	75
United States	$ 824	$ 687	$ 698	$ 768	$ 753	$ 757	$786	$ 787	$ 798	$ 840	$ 764	93
Kansas Index	100	81	71	69	69	73	78	72	74	77		
United States Index	100	83	85	93	91	92	95	95	97	102		

Source: Simon Kuznets, National Income and Its Composition, 1919-1938, p. 544; United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-1950, and for the United States, 1910-50; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Tables 1 and 9.

Table 12

Relative Importance of Net Farm Income in Kansas and United States, 1920-1929

Year	Kansas: Farm income as percentage of total income	Kansas: Index of percentages	United States: Farm income as percentage of total income	United States: Index of percentages	Ratio of relative importance of Kansas farm income to U.S. farm income
1920	21.3	100	10.0	100	2.13
1921	20.8	98	6.8	68	3.06
1922	14.6	69	7.1	71	2.06
1923	11.8	55	7.3	73	1.62
1924	23.0	108	7.8	78	2.95
1925	22.8	107	8.6	86	2.65
1926	23.0	108	7.7	77	2.99
1927	19.8	93	7.5	75	2.64
1928	24.2	114	7.2	72	3.36
1929	24.9	117	6.9	69	3.61
Average ratio					2.71

Source: Simon Kuznets, National Income and Its Composition, 1919-1938, p. 544; United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, p. 164; Appendix Tables 1 and 9.

in Kansas averaged only 75 per cent of the 1920 figure as compared with a national average of 93 per cent. This development is in sharp contrast to that of the period 1900-1919, when Kansas per capita agricultural income advanced more rapidly than in the nation while nonagricultural income increased at approximately the same rate.

Before completing the above analysis, the writer had assumed more or less without question that Kansas nonagricultural income had kept fairly close to the national average, while the depressed condition of agriculture had been primarily responsible for the relative position of total per capita income in the state. The reader may instantly counter that this would have been impossible—that the reverse must of necessity have been the case due to the dependence of the Kansas economy upon agriculture. It is readily conceivable that the woes of agriculture would be subject to some type of multiplier effect depending upon the relative importance of agriculture to the economy. From Table 12 it is noted that between 1920 and 1929, agriculture was approximately 2.71 times more important income-wise to Kansas than to the nation. Undoubtedly this was a weighty, if indeterminate, factor in accounting for the behavior of Kansas nonfarm income as compared with the United States.

To discover which industries made the most significant changes—and in which direction—wage and salary payments in various industries were divided by total population (Table 13). One of the first facts to be noted is that the per capita payments of wages and salaries during the decade averaged only 80 per cent of the 1920 per capita payrolls in

Kansas and 94 per cent for the nation. Per capita wage payments in Kansas never approached their 1920 peak, while in the United States, the base year was exceeded only by 1929. By way of contrast, it should be remembered that the comparable tables (7 and 8) show that Kansas wage payments in the previous period increased by 89 per cent over their 1900 base, while the nation registered a gain of only 56 per cent.

Locating the causal factors in this abrupt reversal of trend is most difficult. Inspection of the industry breakdowns of Table 13 does not provide any easy answers. Kansas wages and salaries in government increased more rapidly than in the nation, while compensation in mining and transportation did not decrease quite as much as the nation. In all other industries the state compared less favorably at the end of the decade. As would be expected, the greatest difference between the two areas occurred in trade and finance. Kansas payrolls in manufacturing also fell off much more sharply than in the nation. A decline in trade and in manufacturing dependent upon local markets would be a natural accompaniment of depressed conditions in agriculture, since they are essentially passive, reflecting existing conditions.

In order for Kansas to have kept pace with the United States in per capita wage payments, it would have been necessary for the basic industries of mining and manufacturing to have increased their relative share of total wage payments sufficiently to counterbalance the dampening effect of a depressed agriculture upon the passive industries. Instead of an increasing share, however, per capita wage payments in manufacturing for 1921-19$\overset{2}{3}$9 averaged only 68 per cent of the 1920 figure—the greatest decline of any Kansas industry. Surprisingly enough, of the

Table 13

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1920-1929
(in dollars)

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	Average payment 1920-1929	Average payment 1921-1929 as percentage of 1920
All Wages and Salaries												
Kansas	$36.62	$29.32	$27.60	$27.72	$28.44	$29.69	$31.02	$29.28	$30.06	$30.91	$30.07	80
United States	$41.22	$32.74	$33.62	$38.71	$37.96	$38.87	$40.90	$40.69	$40.96	$42.88	$38.86	94
Kansas index	100	80	75	76	78	81	85	80	82	84		
United States index	100	79	82	94	92	94	99	99	99	104		
Wages and Salaries in Mining												
Kansas	$2.17	$ 1.75	$ 1.65	$ 1.57	$ 1.56	$ 1.72	$ 1.83	$ 1.66	$ 1.63	$ 1.57	$ 1.71	76
United States	$1.91	$ 1.43	$ 1.28	$ 1.77	$ 1.49	$ 1.37	$ 1.57	$ 1.40	$ 1.23	$ 1.26	$ 1.47	74
Kansas index	100	81	76	72	72	79	84	76	75	72		
United States index	100	75	67	93	78	72	82	73	64	66		
Wages and Salaries in Manufacturing												
Kansas	$ 6.67	$ 4.53	$ 4.60	$ 4.86	$ 4.07	$ 4.47	$ 4.74	$ 4.40	$ 4.43	$ 4.60	$ 4.74	68
United States	$13.72	$ 9.11	$ 9.52	$11.63	$10.86	$11.19	$11.50	$11.37	$11.50	$12.25	$11.27	80
Kansas index	100	68	69	73	61	67	71	66	66	69		
United States index	100	66	69	85	79	82	84	83	84	89		
Wages and Salaries in Trade												
Kansas	$ 6.11	$ 5.30	$ 4.63	$ 4.42	$ 5.13	$ 5.44	$ 5.89	$ 5.15	$ 5.53	$ 5.90	$ 5.35	86
United States	$ 5.68	$ 4.76	$ 5.16	$ 5.71	$ 5.72	$ 6.03	$ 6.32	$ 6.12	$ 6.24	$ 6.58	$ 5.83	103

Table 13 (Concluded)

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1920-1929
(in dollars)

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	Average payment 1920-1929	Average payment 1921-1929 as percentage of 1920
Kansas index	100	87	76	72	84	89	96	84	91	97		
United States index	100	84	91	101	101	106	111	108	110	116		
Wages and Salaries in Government												
Kansas	$ 2.74	$ 2.95	$ 2.98	$ 3.02	$ 3.11	$ 3.22	$ 3.27	$ 3.47	$ 3.56	$ 3.52	$ 3.18	118
United States	$ 3.64	$ 3.67	$ 3.59	$ 3.66	$ 3.75	$ 3.85	$ 3.99	$ 4.15	$ 4.28	$ 4.42	$ 3.90	108
Kansas index	100	109	109	110	114	118	119	127	130	128		
United States index	100	101	99	101	103	106	110	114	118	121		
Wages and Salaries in Transportation												
Kansas	$ 5.79	$ 4.76	$ 4.24	$ 4.42	$ 4.61	$ 4.56	$ 4.92	$ 4.89	$ 5.13	$ 5.48	$ 4.88	83
United States	$ 5.66	$ 4.43	$ 4.21	$ 4.61	$ 4.47	$ 4.46	$ 4.58	$ 4.49	$ 4.40	$ 4.51	$ 4.58	78
Kansas index	100	82	73	76	80	79	85	84	89	95		
United States index	100	78	74	81	79	79	81	79	78	80		
Wages and Salaries in Finance												
Kansas	$ 1.13	$ 1.04	$ 1.08	$ 1.10	$ 1.10	$ 1.14	$ 1.12	$ 1.08	$ 1.09	$ 1.29	$ 1.12	101
United States	$ 1.55	$ 1.59	$ 1.59	$ 1.62	$ 1.73	$ 1.75	$ 1.91	$ 2.04	$ 2.19	$ 2.35	$ 1.83	120
Kansas index	100	92	96	97	97	101	99	96	96	114		
United States index	100	103	103	105	112	113	123	132	141	152		

Source: Simon Kuznets, National Income and Its Composition, 1919-1938, pp. 314, 544; United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, pp. 160, 164; Bureau of the Census, Statistical Abstract of the United States, 1953, p. 13; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 2.

drop of nearly 14,000 in manufacturing employment between 1919 and 1929, almost 8,000—roughly 60 per cent—occurred in meat packing and slaughter. Employment in the manufacture of machinery dropped 14 per cent, in production of transportation equipment, 8 per cent, and so forth. Mineral industries, on the other hand, provided an ameliorative influence only by declining less than the national average.[61] Thus, almost all of the Kansas industries having markets beyond the borders of the state lost ground during the twenties. Whereas 11 per cent of all wage earners in meat packing were employed in Kansas in 1919, the Kansas share had fallen to 8 per cent by 1929. There was no industry or combination of industries in Kansas by which the state could effectively share in the general prosperity.

Concomitantly with the decreased opportunities in nonagricultural employment in the state, the rate at which the farm population moved to the cities fell below the national average with a resultant lowering of total per capita income. This fact is undoubtedly a contributing factor to the relatively greater decline in per capita farm income in Kansas as shown in Table 11 _supra_. At the risk of wearying the reader, attention is again invited to the exact reversal of conditions existing prior to the twenties. The proportion of total population on the farms decreased by only 7.2 per cent in Kansas between 1920 and 1929; in the nation, the proportion of farm population dropped 16.3 per cent during the same period.[62] This is merely another way of saying that industrialization, which got off to a good start during the first two decades of the century, suffered a relapse during the twenties with the result that Kansas lost ground constantly relative to the national averages.

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[61] United States Department of Commerce, Bureau of the Census, Fourteenth Census of the United States, 1920, _Manufactures, 1919_, Vol. IX, pp. 467-468; Fifteenth Census of the United States, 1930, _Manufactures, 1929_, Vol. III, pp. 190-191.

[62] United States Department of Agriculture, Agricultural Marketing Service, _op. cit._, pp. 4-7.

The Thirties

For the twenties, two possible hypotheses were suggested upon which an explanation of Kansas' relatively depressed condition might be based: (a) decrease in nonagricultural income was a natural consequence of the relatively greater importance of agriculture in the state as compared with the nation; (b) nonagricultural income declined relatively because basic industries other than agriculture, namely manufacturing, lost ground in their established areas and were unable to develop new products having nationwide markets in order to share in the general prosperity. The conditions to be analysed were per capita agricultural income decreasing at approximately the same rate as in the United States accompanied by a much more drastic decline in nonagricultural income. Meanwhile, agricultural income was an increasing percentage of total income in Kansas and a decreasing percentage in the nation.

The statistical picture of the thirties is quite dissimilar. Kansas agricultural income on a per capita basis decreased by 52 per cent during the decade as compared with only 34 per cent for the United States (Table 14). Nonagricultural income in the state, which during the twenties had shown great divergence from the national index, changed at

Table 14

Per Capita Income of Farm and Nonfarm Population, Kansas and United States, 1929-1939
(in dollars)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	Average per capita income for period	Average income as percentage of base year
Per capita farm income													
Kansas	$ 365	$ 231	$ 143	$ 81	$ 100	$ 180	$ 220	$ 231	$ 247	$ 161	$ 180	$ 177	48
United States	$ 188	$ 129	$ 94	$ 55	$ 73	$ 74	$ 153	$ 193	$ 180	$ 142	$ 146	$ 124	66
Kansas Index	100	63	39	22	27	49	60	63	68	44	49		
United States Index	100	69	50	29	39	39	81	103	96	76	78		
Per capita nonfarm income													
Kansas	$ 686	$ 633	$ 550	$ 427	$ 391	$ 441	$ 460	$ 474	$ 515	$ 480	$ 486	$ 486	71
United States	$ 840	$ 749	$ 633	$ 487	$ 466	$ 535	$ 561	$ 642	$ 683	$ 624	$ 660	$ 604	72
Kansas Index	100	93	80	62	57	64	67	69	75	70	71		
United States Index	100	89	75	58	55	64	67	76	81	74	79		

Source: United States Department of Commerce, National Income Division, _National Income and Product of the United States, 1929-1950_, p. 164; United States Department of Agriculture, Agricultural Marketing Service, _Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-50_; Kansas State Board of Agriculture, _Thirty-Seventh Biennial Report_, p. 62; Appendix Tables 1 and 9.

almost the same rate as the nation (29 per cent decrease compared with 28). Hypothesis (a) above does not fit during the thirties because the extreme drop in per capita agricultural income was not accompanied by a correspondingly severe drop in nonagricultural income. Of course, no account has been taken in these estimates of the extent to which the rate of spending of the farm population exceeded estimated net income due to the using up of capital, borrowing, and so forth. Hypothesis (b) is not ruled out, however, because per capita income payments in manufacturing experienced approximately the same rate of decrease (37 per cent for Kansas, 33 per cent for the nation) (Table 15). The average decline in total per capita income exhibited much the same trend—34 per cent for Kansas, 29 per cent for the United States. During the thirties, agriculture as a percentage of total income was decreasing at a faster rate than in the nation, which is further explanation of the fact that total income followed nonfarm income more closely than farm income, as it had during the twenties. (Table 16).

Stated in another way, adjustments were made in various segments of the nonagricultural economy which enabled the state to slow down its rate of loss vis-a-vis the United States. If the relationships existing between per capita farm income and total per capita income from 1920 to 1929 had obtained during the next decade, Kansas total per capita income would have dropped by 57 per cent rather than the 34 per cent actually experienced. This is a negative type of improvement, to be sure, but it is fortunate for the people of Kansas that they were able to divorce themselves to this extent from an agriculture suffering

Table 15

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1929-1939

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	Average per capita income for period	Average income as a percentage of base year
All Wages and Salaries													
Kansas	$30.91	$28.35	$24.01	$18.41	$16.85	$18.36	$19.57	$20.49	$23.03	$21.78	$22.24	$21.31	69
United States	$41.20	$37.29	$31.35	$24.26	$22.95	$26.52	$28.69	$32.61	$35.67	$32.98	$34.95	$30.73	75
Kansas index	100	92	78	60	55	59	63	66	75	70	72		
United States index	100	91	76	59	56	64	70	79	87	80	85		
Wages and Salaries in Mining													
Kansas	$ 1.57	$ 1.37	$ 1.02	$ .74	$ .74	$ .80	$ .95	$ 1.12	$ 1.45	$ 1.15	$ 1.12	$ 1.05	67
United States	$ 1.24	$ 1.08	$ .80	$ .55	$ .55	$ .72	$ .76	$ .88	$1.01	$ .85	$ .87	$ .81	65
Kansas index	100	87	65	47	47	51	61	71	92	73	71		
United States index	100	87	65	44	44	58	61	71	81	69	70		
Wages and salaries in Manufacturing													
Kansas	$ 4.60	$ 4.19	$ 3.32	$ 2.45	$ 2.39	$ 2.49	$ 2.42	$ 2.81	$ 3.08	$ 2.83	$ 2.87	$ 2.89	63
United States	$13.22	$11.25	$ 8.71	$ 6.15	$ 6.23	$ 7.63	$ 8.51	$ 9.69	$11.31	$ 9.12	$10.38	$ 8.90	67
Kansas index	100	91	72	53	52	54	53	61	67	62	62		
United States index	100	85	66	47	47	58	64	73	86	69	79		
Wages and Salaries in Trade													
Kansas	$ 5.90	$ 5.20	$ 4.41	$ 3.19	$ 2.71	$ 3.44	$ 3.57	$ 3.45	$ 4.07	$ 3.68	$ 3.80	$ 3.75	64
United States	$ 7.63	$ 7.04	$ 6.10	$ 4.72	$ 4.20	$ 4.83	$ 5.20	$ 5.64	$ 6.34	$ 6.15	$ 6.39	$ 5.66	74

Table 15 (Concluded)

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1929-1939

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	Average per capita income for period	Average income as a percentage of base year
Kansas index	100	88	75	54	46	58	61	58	69	62	64		
United States index	100	92	80	62	55	63	68	74	83	81	84		
Wages and Salaries in Government													
Kansas	$ 3.52	$ 3.63	$ 3.61	$ 3.41	$ 3.28	$ 3.41	$ 3.69	$ 3.70	$ 4.36	$ 4.60	$ 4.85	$ 3.85	109
United States	$ 4.07	$ 4.20	$ 4.26	$ 3.99	$ 4.11	$ 4.83	$ 5.13	$ 6.16	$ 5.83	$ 6.35	$ 6.28	$ 5.11	126
Kansas index	100	103	103	97	93	97	105	105	124	131	138		
United States index	100	103	105	98	101	119	126	151	143	156	154		
Wages and Salaries in Transportation													
Kansas	$ 5.48	$ 5.15	$ 4.58	$ 3.26	$ 2.98	$ 3.23	$ 3.38	$ 3.67	$ 3.87	$ 3.44	$ 3.43	$ 3.70	68
United States	$ 3.88	$ 3.44	$ 2.85	$ 2.13	$ 1.95	$ 2.10	$ 2.27	$ 2.53	$ 2.75	$ 2.45	$ 2.62	$ 2.51	65
Kansas index	100	94	84	59	54	59	62	67	71	63	63		
United States index	100	89	73	55	50	54	59	65	71	63	68		
Wages and Salaries in Finance													
Kansas	$ 1.29	$ 1.18	$ 1.02	$ .84	$ .72	$ .73	$ .76	$ .81	$ .86	$ .89	$ .93	$ .87	67
United States	$ 2.30	$ 2.13	$ 1.90	$ 1.61	$ 1.45	$ 1.51	$ 1.55	$ 1.67	$ 1.79	$ 1.72	$ 1.75	$ 1.71	74
Kansas index	100	91	79	65	56	57	59	63	67	69	72		
United States index	100	93	83	70	63	66	67	73	78	75	76		

Source: United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, pp. 160-164; Bureau of the Census, Statistical Abstract of the United States, 1953, p. 13; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 2.

Table 16

Relative Importance of Net Farm Income in Kansas and United States, 1929-1939

	Kansas		United States		
Year	Farm income as percentage of total income	Index of percentages	Farm income as percentage of total income	Index of percentages	Ratio of relative importance of Kansas farm income to U. S. farm income
1929	24.9	100	6.9	100	3.61
1930	18.7	75	5.4	78	3.46
1931	14.3	57	4.7	68	3.04
1932	11.0	44	3.6	52	3.06
1933	14.2	57	4.9	71	2.90
1934	20.8	84	4.4	64	4.73
1935	23.0	92	8.3	120	2.77
1936	24.4	98	9.0	130	2.71
1937	21.3	86	7.8	113	2.73
1938	15.3	61	6.7	97	2.28
1939	16.1	65	6.4	93	2.52
Average ratio					3.07

Source: United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, p. 164; Robert E. Graham, Jr., "State Income Payments in 1951," Survey of Current Business, Vol. 32, No. 8, August, 1952, p. 16; Appendix Tables 1 and 9.

from drought as well as all of its previous woes.

In an effort to show which types of compensation experienced the largest relative gains, the differences between Kansas and United States average percentages of change from their respective base years have been computed (Table 17). It is apparent that, with the exception of per capita farm income, government, and transportation, each major component of total per capita income had improved its position relative to the United States. This would have been small comfort, however, even if it had been pointed out, since the national economy was in the throes of the Great Depression.

Summary, 1920-1939

For an over-all summary of changes in the Kansas economy between 1920 and 1939, the reader is referred to Table 18. Hypothetical incomes based on United States indexes as for the previous period, indicate that Kansas per capita farm income averaged 95 per cent of the assumed figure. This average, however, hides some wide variations—from 158 per cent of hypothetical income in 1934 to 48 per cent in 1923. Nonfarm income averaged 79 per cent of the hypothetical figure. If both farm and nonfarm components of total per capita income had changed at the United States rates, the average decline for the two decades would have been 18 per cent. The realized decline in total per capita income was 34 per cent, leaving 16 per cent to be accounted for by differences between state and nation. Of this 16 per cent, only 1 per cent was due to a difference in rate of change of farm income;

Table 17

Comparison of Rates of Change, Selected Income Categories, Kansas and United States, 1920-1929, 1929-1939

Type of per capita income	Difference between United States and Kansas average percentage of change from base years[a] 1920-1929	1929-1939
Total income	-19	- 5
Total wages and salaries	-14	- 6
Wages and salaries in manufacturing	-12	- 4
Wages and salaries in trade	-17	-10
Wages and salaries in mining	+ 2	+ 2
Wages and salaries in government	+10	-17
Wages and salaries in transportation	+ 5	+ 3
Wages and salaries in finance	-19	- 7
Net farm income	- 4	-18

[a] Figures shown are the spread between United States and Kansas average percentage of change from base year. A percentage change of 0.0 would mean that the United States and Kansas had experienced identical rates of change (on the average). Minus quantities indicate that the Kansas average decline from the base year was greater than for the nation; a plus indicates a smaller than average decline or a greater than average increase. Base years are 1920 and 1929.

Source: Tables 11, 13, 14, 15.

Table 18

Comparison of Realized Kansas per Capita Income with Hypothetical Incomes Based on United States Indexes, 1920-1939 (in dollars)

Year	Hypothetical net farm income	Realized net farm income	Realized income as percentage of hypothetical	Hypothetical nonfarm income	Realized nonfarm income	Realized income as percentage of hypothetical	Hypothetical Income A (realized net farm and assumed nonfarm)	Hypothetical Income B (both components assumed)	Hypothetical Income C (United States rates of change in farm population)	Realized total per capita income
1920	$336	$336	100	$887	$887	100	$657	$657	$657	$657
1921	195	265	136	736	729	99	539	509	538	534
1922	215	155	72	754	642	85	507	531	444	441
1923	255	123	48	825	624	76	541	594	428	422
1924	282	279	99	807	626	78	596	597	494	488
1925	333	288	86	816	664	81	603	621	523	512
1926	302	318	105	843	702	83	635	628	561	549
1927	299	249	83	843	646	77	611	630	505	492
1928	289	331	115	860	655	76	655	639	541	529
1929	292	365	125	905	686	76	698	670	574	560
1930	198	231	117	807	633	78	586	574	494	475
1931	144	143	100	685	550	81	473	473	410	390
1932	84	81	96	523	427	82	349	350	306	289
1933	114	100	88	506	391	77	346	352	287	274
1934	114	180	158	577	441	76	422	396	349	337
1935	239	220	92	603	460	76	456	463	378	366
1936	299	231	77	692	474	68	520	545	390	381

Table 18 (Concluded)

Comparison of Realized Kansas Per Capita Income with Hypothetical Incomes Based on United States Indexes, 1920-1939
(in dollars)

Year	Hypothetical net farm income	Realized net farm income	Realized income as percentage of hypothetical	Hypothetical nonfarm income	Realized nonfarm income	Realized income as percentage of hypothetical	Hypothetical Income A (realized net farm and assumed nonfarm)	Hypothetical Income B (both components assumed)	Hypothetical Income C (United States rates of change in farm population)	Realized total per capita income
1937	$279	$247	89	$736	$515	70	$560	$571	$425	$416
1938	218	161	74	674	480	71	494	514	374	366
1939	225	180	80	710	486	68	529	545	386	380
Average for the period 1920-1939	$236	$224	95	$739	$586	79	$539	$543	$453	$443
Average income 1921-1939 as percentage of 1920	69	63	--	83	64	--	81	82	67	66

Source: United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-50; Tables 11, 14, and 28.

the other 15 per cent were due to the more extreme decline in nonagricultural income experienced in the state. This, in turn, reverts back to the problems discussed in greater detail in connection with the 1920-1929 period.

Reference to Hypothetical Income C indicates that total per capita income was 1 per cent lower than it might possibly have been if Kansans had left the farms for other employment at the United States rate. This process of "backing up" on the farms was most noticeable in Kansas between 1920 and 1929. During this decade, the proportion of Kansans on farms decreased by approximately 8 per cent, while the farm population of the nation was declining by more than 16 per cent. Between 1929 and 1939, the Kansas exodus from the farms proceeded at a much faster rate with the result that the proportion of the population living on farms decreased by 11 per cent; meanwhile the nation's proportion of farm residents dropped by slightly more than 6 per cent. For the entire period, 1920-1939, the Kansas percentage of farm population decreased by approximately 18 per cent in comparison with 22 per cent for the United States.[63]

1939-1952

In 1940, both state and nation made encouraging progress in emerging from the economic doldrums (see Table 10, Figure 4). Kansas per capita income in 1940 increased by 11 per cent over 1939, and United

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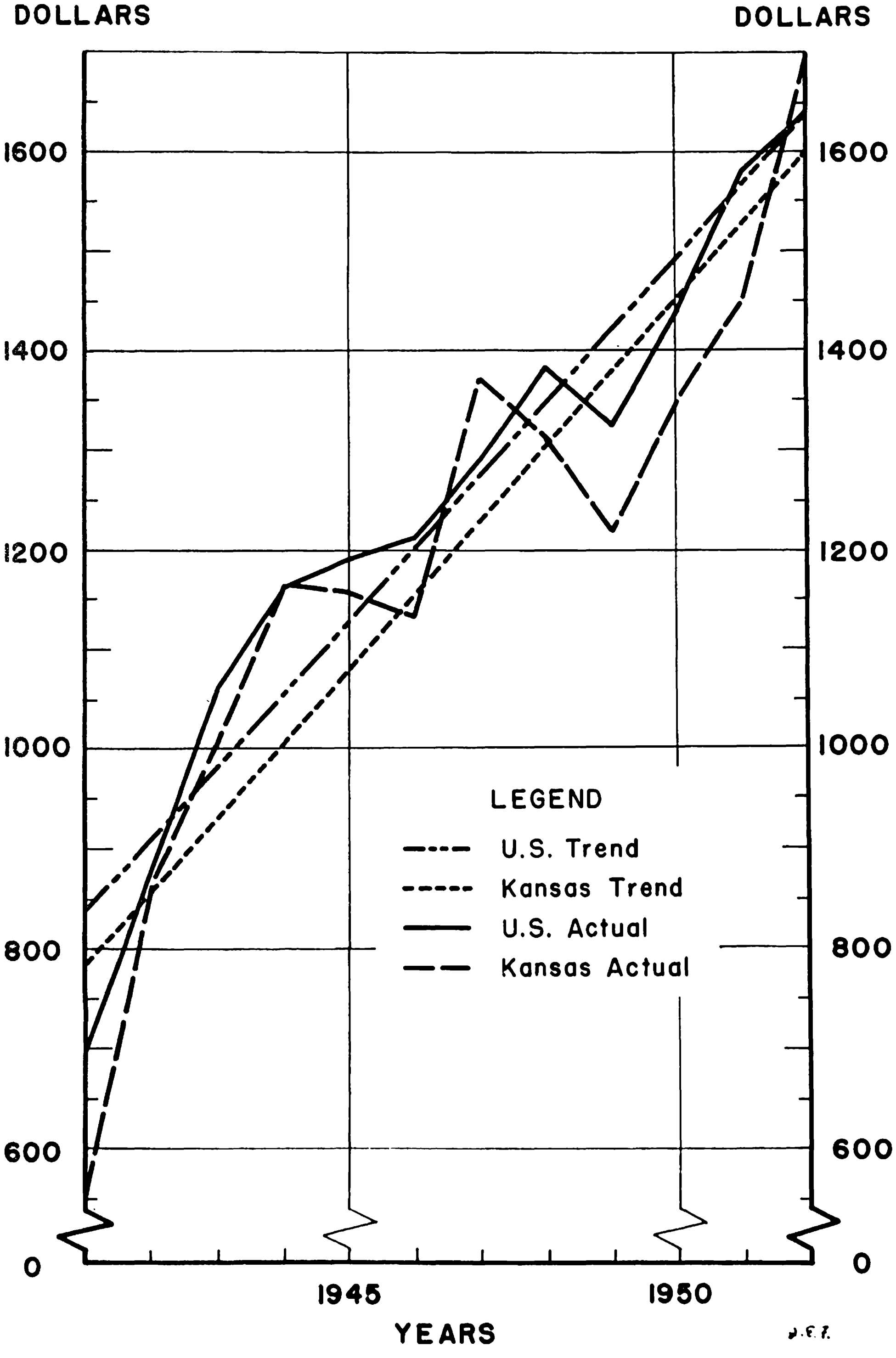
[63] *Idem.*

States income increased by 7 per cent during the year. Per capita income in the state in 1941 was 47 per cent above the 1939 figure, while the United States gained 29 per cent in the two year period. In spite of the more rapid gain, however, Kansas per capita income was still $135 below the national average in 1941. By 1942, this gap had been reduced to only $13.00 (Table 19, Figure 5). Figure 5 indicates that Kansas improved its relative position between 1941 and 1952, although the change in trend lines is not so perceptible as for the previous period of relative gain, 1900-1918. Both farm and nonfarm income made gains on a per capita basis. However, relative increases in farm income were much larger than those in the nonfarm sector (Table 20). Discussion of this data is limited to 1940-1950, because farm population estimates are not available for later years. The average per capita farm income for the period was 421 per cent of the 1940 figure as compared with 231 per cent of the base year for nonfarm income. Comparable figures for the United States were 299 per cent for farm income and 189 per cent for nonfarm income.

It is possible--by utilizing the partial equilibrium methodology and assuming other things to remain equal--to make approximations of the effects of these differences in rates of change on Kansas per capita incomes vis-à-vis the United States (Table 21). Kansas realized per capita farm income was 40 per cent above the hypothetical income computed by use of United States indexes. Nonagricultural income was 21 per cent above the assumed figure based on national data. Realized Kansas total per capita income for the ten-year period shows an average increase of 164 per cent of the comparable figure for 1940; it would

Figure 5

ACTUAL AND COMPUTED PER CAPITA INCOME PAYMENTS, KANSAS AND UNITED STATES, 1941 - 1952



Source: Table 19

Table 19

Actual and Computed[a] Per Capita Income Payments, Kansas and United States, 1941-1952
(in dollars)

Year	United States per capita income	Computed per capita income	Kansas per capita income	Computed per capita income
1941	$ 693	$ 836	$ 568	$ 782
1942	876	909	863	857
1943	1,059	982	1,006	931
1944	1,160	1,055	1,164	1,006
1945	1,191	1,128	1,157	1,080
1946	1,211	1,201	1,133	1,154
1947	1,293	1,274	1,372	1,229
1948	1,383	1,347	1,326	1,303
1949	1,325	1,420	1,220	1,378
1950	1,440	1,493	1,349	1,452
1951	1,581	1,566	1,453	1,526
1952	1,639	1,640	1,698	1,601

[a] Computed by least squares. United States $Y_c = 1237.58 + 36.54X$. Kansas $Y_c = 1191.58 + 37.20X$. Origin = January 1, 1947. X = 6 months.

Source: Table 28.

Table 20

Per Capita Income of Farm and Nonfarm Population, Kansas and United States, 1940-1950

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	Average per capita income for period	Average income as percentage of base year
Per capita farm income													
Kansas	$182	$333	$638	$642	$717	$678	$772	$1,299	$997	$681	$912	$767	421
United States	$162	$229	$358	$441	$464	$495	$558	$ 574	$682	$501	$546	$485	299
Kansas Index	100	183	351	353	394	373	424	714	548	374	501		
United States Index	100	141	221	272	286	306	344	354	421	309	337		
Per capita nonfarm income													
Kansas	$545	$676	$ 979	$1,162	$1,339	$1,357	$1,301	$1,403	$1,453	$1,414	$1,485	$1,257	231
United States	$699	$830	$1,020	$1,209	$1,317	$1,350	$1,375	$1,459	$1,549	$1,498	$1,618	$1,323	189
Kansas Index	100	124	180	213	246	249	239	257	267	259	272		
United States Index	100	119	146	173	188	193	197	209	222	214	231		

Source: United States Department of Commerce, National Income Division, National Income and Product of the United States, 1929-1950, p. 165; United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-50; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62; Appendix Table 15.

Table 21

Comparison of Realized Kansas Per Capita Income with Hypothetical Incomes Based on United States Indexes, 1940-1950 (in dollars)

Year	Hypothetical net farm income	Realized farm income	Realized income as percentage of hypothetical	Hypothetical nonfarm income	Realized nonfarm income	Realized income as percentage of hypothetical	Hypothetical Income A (realized net farm and assumed nonfarm)	Hypothetical Income B (both components assumed)	Hypothetical Income C (United States rates of change in farm population)	Realized total per capita income
1940	$182	$ 182	100	$ 545	$ 545	100	$ 423	$ 423	$ 423	$ 423
1941	257	333	130	649	676	104	541	515	562	558
1942	402	638	159	796	979	123	743	663	870	863
1943	495	642	130	943	1,162	123	852	807	1,012	1,006
1944	521	717	138	1,025	1,339	131	936	879	1,170	1,164
1945	557	678	122	1,052	1,357	129	945	910	1,176	1,157
1946	626	772	123	1,074	1,301	121	986	943	1,155	1,133
1947	644	1,299	202	1,139	1,403	123	1,185	996	1,374	1,372
1948	766	997	130	1,210	1,453	120	1,153	1,092	1,334	1,326
1949	562	681	121	1,166	1,414	121	1,041	1,010	1,226	1,220
1950	613	912	149	1,259	1,485	118	1,174	1,100	1,345	1,349
Average for the period 1940-1950	$511	$714	140	$987	$1,192	121	$907	$849	$1,059	$1,052
Average income 1941-1950 as percentage of 1940	299	421	--	189	231	--	226	211	265	264

Source: United States Department of Agriculture, Agricultural Marketing Service, Farm Population: Annual Estimates by States, Major Geographic Divisions, and Regions, 1920-50, and for the United States, 1910-50; Tables 20 and 28.

have gained only 111 per cent over 1940 if Kansas advances had been limited to the national rates of change. In other words, the increase in Kansas per capita income was 48 per cent greater than that experienced in the United States. When this increase is broken down into its components, it is observed that nonfarm income accounts for the larger share of the total increase, although the per capita rate of increase is not so large. This is because the great bulk of the population derives a livelihood from nonagricultural employment.

Increases in per capita farm income account for 15 of the total of 53 percentage points difference between Kansas realized and hypothetical income; the remaining 38 percentage points can be attributed to a combination of increased per capita incomes of the nonagricultural population and the shifting of population from the farms to other industries. Hypothetical Income C, based upon the national index of change in farm population, is slightly higher than realized income during the forties. This indicates that Kansans were not leaving the farms quite as rapidly as was true in the nation as a whole. Logical reasons for this trend are not difficult to find. Kansas agriculture was enjoying its most prolonged period of prosperity, with market and weather conditions cooperating to an unprecedented degree. In spite of the fact that per capita farm incomes never achieved equality with nonfarm incomes, they were increasing at a rapid rate and provided strong incentives to stay on, or move to, the farms rather than seek industrial employment.

While on the subject of farm income, attention is invited to Table 22 which is devoted to changes in the relative importance of net

Table 22

Relative Importance of Net Farm Income in Kansas and United States, 1940-1952

	Kansas		United States		
Year	Farm income as percentage of total income	Index of percentages	Farm income as percentage of total income	Index of percentages	Ratio of relative importance of Kansas farm income to U.S. farm income
1940	14.6	100	6.5	100	2.25
1941	20.7	142	7.0	108	2.96
1942	25.0	171	8.9	137	2.81
1943	19.2	132	8.3	128	2.31
1944	18.9	129	7.7	118	2.45
1945	18.1	124	8.0	123	2.26
1946	20.3	139	8.7	134	2.33
1947	28.7	197	8.4	129	3.42
1948	20.8	142	8.7	134	2.39
1949	10.4	71	6.6	102	1.58
1950	16.6	114	6.3	97	2.63
1951	12.1	83	6.5	100	1.86
1952	19.6	134	5.9	91	3.32
Average ratio					2.51

Source: United States Department of Commerce, National Income Division, *National Income and Product of the United States, 1929-1950*, p. 165; "National Income and Product of the United States, 1952," *Survey of Current Business*, Vol. 33, No. 7, July, 1953, p. 17; Robert E. Graham, Jr., "State Income Payments in 1952," *Survey of Current Business*, Vol. 33, No. 8, August, 1953, p. 12. Appendix Table 15.

farm income in Kansas and in the United States from 1940 to 1952. Agricultural income, as would be expected, increased as a percentage of total income in both state and nation but at a much faster rate in Kansas. As a result, the ratio of relative importance of Kansas farm income to United States farm income increased during the period.

Table 23 discloses some of the changes which took place in the nonagricultural sector of the economy. Annual per capita wage and salary payments increased much more rapidly in Kansas than in the nation, averaging 277 per cent of the 1939 figure as compared with 236 per cent for the United States. Of the various industries, the relative advance of manufacturing was by far the most spectacular. Annual wage payments in manufacturing were only $3.23 per person in 1939, but, by 1952, such payments had climbed to the astounding amount of $26.72 for each man, woman, and child in the state. The average increase over the 1939 payments was 363 per cent as contrasted with an increase of 175 per cent in the United States for the same period. Other industries in which Kansas exceeded the national rate of increase were trade, transportation, and finance. In mining and government, Kansas failed to keep pace with the United States trend.

INTERNAL CHANGE

The discussion of economic changes thus far has been primarily on the basis of comparison with national averages. The analysis would certainly be incomplete without a review of the outstanding changes which have occurred within the Kansas economy itself. Almost all of these have been mentioned or implied in the foregoing discussion, but specific mention will serve to emphasize them.

Table 23

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1939-1952

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	Average per capita income for period	Average income as a percentage of base year
All Wages and Salaries (in dollars)																
Kansas	21.69	22.52	28.30	43.88	56.86	63.84	59.97	54.97	61.54	67.93	68.87	71.61	86.12	94.40	60.06	277
United States	34.95	37.58	46.35	61.15	78.70	87.99	88.82	79.42	85.09	91.97	89.70	96.26	110.73	117.90	82.44	236
Kansas index	100	104	130	202	262	294	276	253	284	313	318	330	397	435		
United States index	100	108	133	175	225	252	254	227	243	263	257	276	317	337		
Wages and Salaries in Manufacturing (in dollars)																
Kansas	3.23	3.69	5.53	11.56	17.97	22.33	17.33	10.65	12.70	13.64	14.05	15.62	22.55	26.72	14.95	463
United States	10.38	11.81	16.31	23.09	30.45	32.29	28.86	26.04	29.63	31.80	29.50	32.67	38.00	40.44	28.53	275
Kansas index	100	114	171	358	556	691	537	330	393	422	435	484	698	827		
United States index	100	114	157	222	293	311	278	251	285	306	284	315	366	390		
Wages and Salaries in Trade (in dollars)																
Kansas	3.55	3.74	4.50	5.04	5.56	6.50	7.61	9.91	11.62	13.08	13.10	13.80	15.37	16.28	9.70	273
United States	6.39	6.83	7.75	8.18	8.84	9.79	11.05	13.94	15.91	17.33	17.21	18.08	19.57	20.40	13.45	210

Table 23 (Cont'd)

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1939-1952

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	Average per capita income for period	Average income as a percentage of base year
Kansas index	100	105	127	142	157	183	214	279	327	368	369	389	433	459		
United States index	100	107	121	128	138	153	173	218	249	271	269	283	306	319		
Wages and Salaries in Mining (in dollars)																
Kansas	1.18	1.12	1.30	1.38	1.67	1.94	1.98	2.07	2.35	2.74	2.66	2.75	3.27	3.42	2.20	186
United States	.87	.98	1.16	1.32	1.48	1.65	1.64	1.69	2.04	2.29	1.97	2.09	2.33	2.34	1.77	203
Kansas index	100	95	110	117	142	164	168	175	199	232	225	233	277	290		
United States index	100	113	133	152	170	190	189	194	234	263	226	240	268	269		
Wages and Salaries in Government (in dollars)																
Kansas	4.37	4.33	4.74	6.57	11.63	13.75	12.62	9.79	9.18	10.31	11.52	11.55	12.86	14.51	10.26	235
United States	6.28	6.41	7.64	12.01	19.98	25.18	26.84	14.73	12.02	12.79	13.70	14.63	18.67	20.87	15.81	252
Kansas index	100	99	108	150	266	315	288	224	210	236	264	264	294	332		
United States index	100	102	122	191	318	401	427	235	191	204	218	233	297	332		

Table 23 (Concluded)

Annual Per Capita Wage and Salary Payments by Selected Industries, Kansas and United States, 1939-1952

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	Average per capita income for period	Average income as a percentage of base year
Wages and Salaries in Transportation (in dollars)																
Kansas	3.36	3.36	4.12	5.40	6.21	8.03	8.15	8.60	9.35	9.89	9.51	9.46	11.01	11.38	8.04	239
United States	2.62	2.75	3.20	3.93	4.88	5.66	5.95	6.05	6.31	6.61	6.24	6.48	7.35	7.55	5.61	214
Kansas index	100	100	123	161	185	239	243	256	278	294	283	282	328	339		
United States index	100	105	122	150	186	216	227	231	241	252	238	247	281	288		
Wages and Salaries in Finance (in dollars)																
Kansas	.82	.85	.98	1.05	1.06	1.13	1.30	1.60	1.76	1.92	2.02	2.35	2.69	2.89	1.66	202
United States	1.75	1.79	1.88	1.95	2.03	2.16	2.37	2.80	2.99	3.26	3.36	3.65	3.95	4.20	2.80	160
Kansas index	100	104	120	128	129	138	159	195	215	234	246	287	328	352		
United States index	100	102	107	111	116	123	135	160	171	186	192	209	226	240		

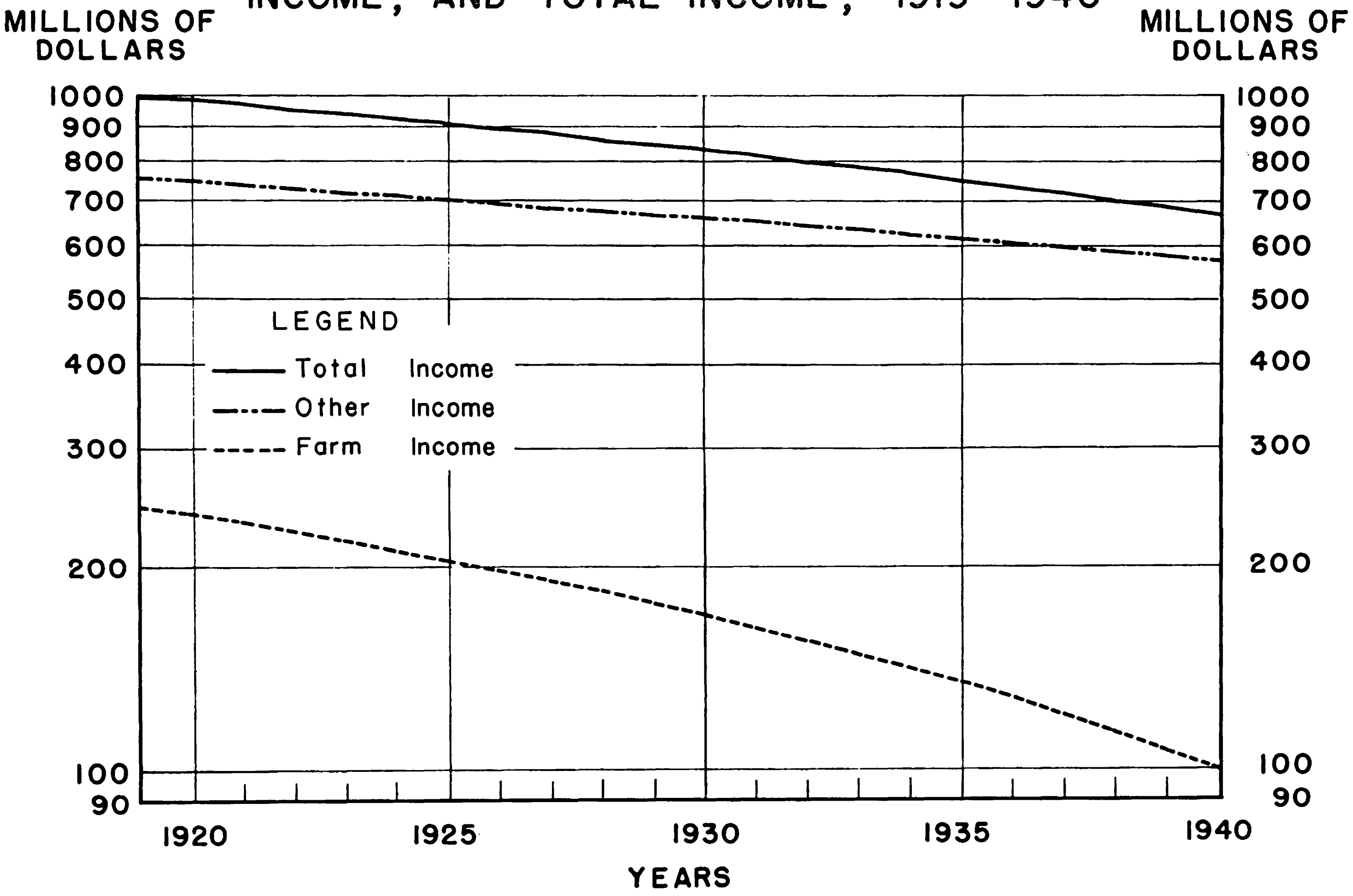
Source: United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1950; 1953; National Income Division, National Income and Product of the United States, 1929-1950, pp. 161, 165; "National Income and Product of the United States, 1952," Survey of Current Business, Vol. 33, No. 7, July, 1953, pp. 16-17; Appendix Table 15.

One of the important trends which is likely to be overlooked in the preceding per capita analysis is the steady decrease in the proportionate share of net income of farm operators in total income payments (Table 24). When total income had a downward slope, agricultural income exhibited a steeper rate of decline (Table 25, Figure 6). When the trend of total income showed an upward slope, agricultural income also sloped upward but more slowly (Figure 2, Figure 7, Table 26).

Figure 8 should make quite clear some of the major changes occurring in percentage distribution of income payments between 1900 and 1939. The proportion of total income coming from wages and salaries increased slowly through 1915; during the war it was pushed down by the greater relative increase of agricultural prices and the increase in property income. From 1920 through 1929, net farm income—even in a relatively good year such as 1929—constituted a smaller percentage of the total than it had in any pre-war year. The largest percentages of income coming from wages and salaries—such as the 65.8 per cent in 1923—were not indicative of structural changes, but were merely the result of default. Since agricultural income is much more susceptible to extreme fluctuations, wages and salaries naturally constitute a larger percentage of a smaller total in poor agricultural years. On a per capita basis, however, it should not be forgotten that nonagricultural declined even more than agricultural income during the twenties. The analysis applicable to the thirties is much the same. Changes in the proportion of wages and salaries to total income tended to be inversely associated with changes in farm income. Changes in per capita

Figure 6

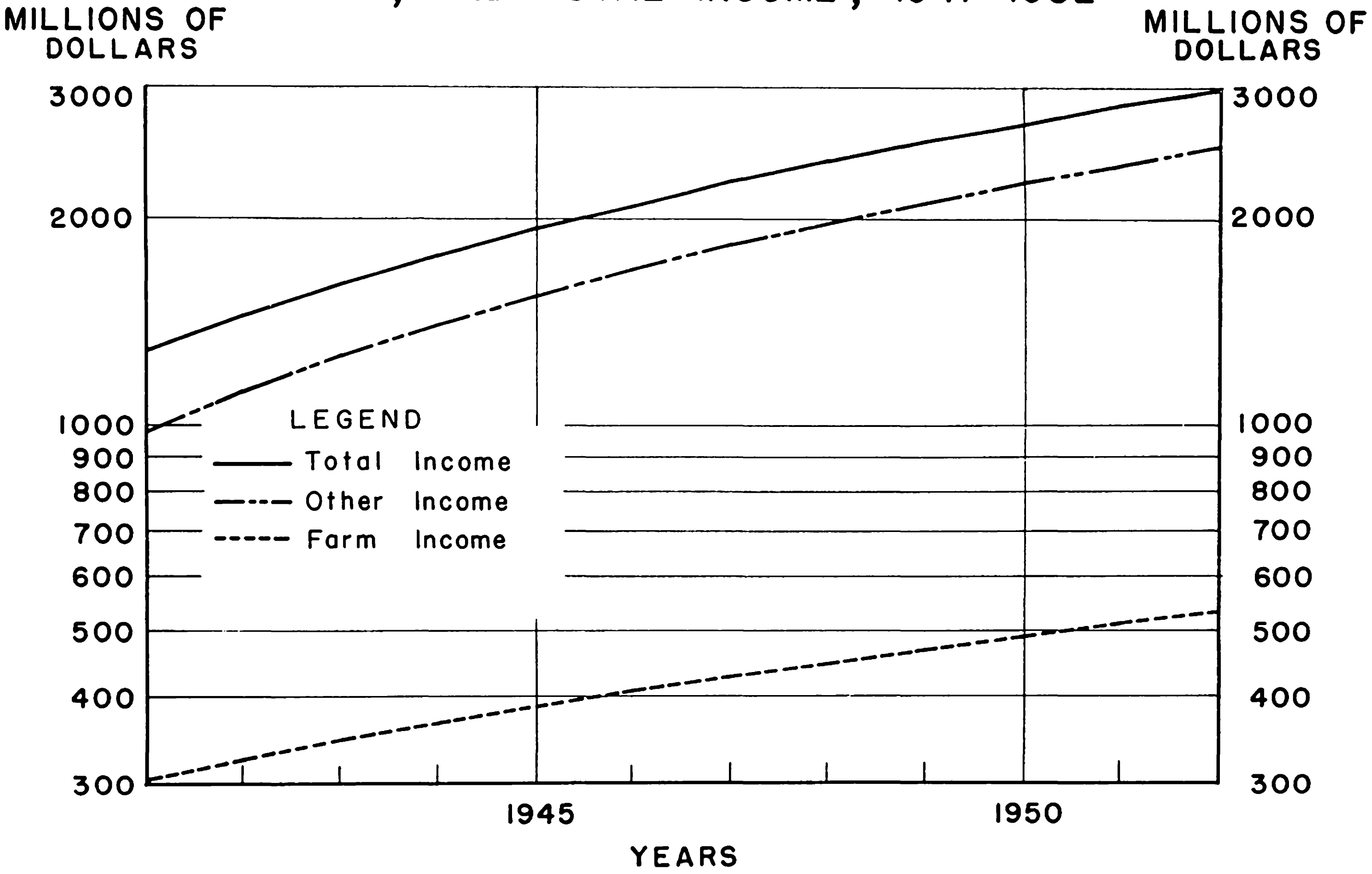
TREND OF NET INCOME OF FARM OPERATORS, ALL OTHER INCOME, AND TOTAL INCOME, 1919 - 1940



Source: Table 25

Figure 7

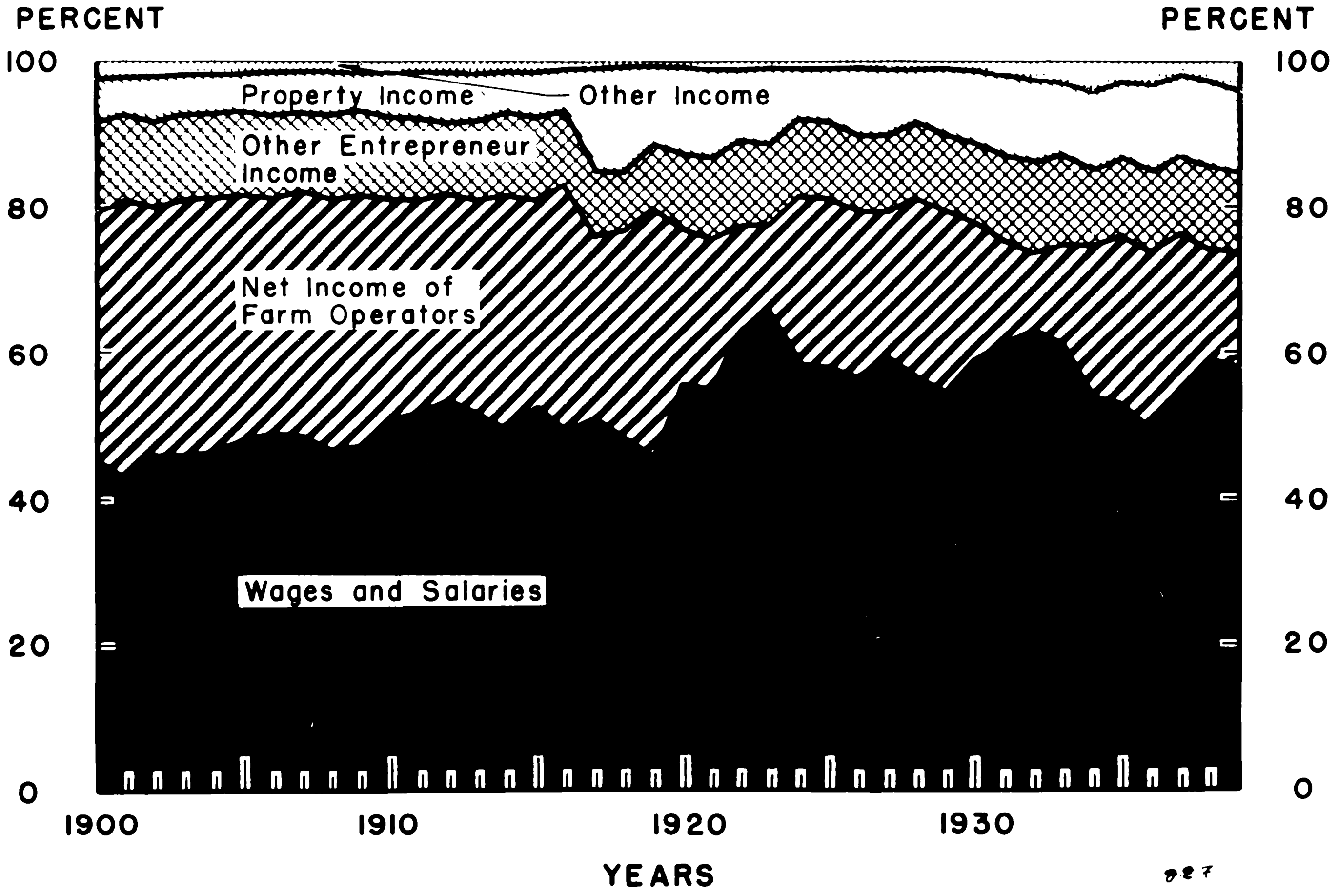
TREND OF NET INCOME OF FARM OPERATORS, ALL OTHER INCOME, AND TOTAL INCOME, 1941-1952



Source: Table 26

Figure 8

PROPORTIONAL SHARES OF TOTAL INCOME, BY TYPE, 1900-1939



Source Table 24

Table 24

Percentage Distribution of Income Payments in Kansas by Type, 1900-1952

Year	Wages and salaries	Net income of farm operators	Other entrepreneurial income	Total entrepreneurial income	Property income	Other income
1900	45.3	34.0	12.1	46.1	6.2	2.4
1901	42.6	38.1	11.7	49.8	5.6	2.0
1902	46.0	34.0	11.7	45.7	6.3	2.0
1903	46.0	34.8	11.6	46.4	5.8	1.8
1904	46.4	34.9	11.5	46.4	5.5	1.7
1905	48.0	33.6	11.3	44.9	5.5	1.6
1906	49.0	32.3	11.1	43.4	6.1	1.5
1907	48.6	33.6	10.5	44.1	6.0	1.3
1908	46.6	34.6	11.3	45.9	6.0	1.6
1909	47.2	34.5	11.2	45.7	5.6	1.5
1910	51.1	30.1	11.1	41.2	6.2	1.5
1911	51.9	29.0	11.0	40.0	6.6	1.5
1912	53.5	27.5	10.4	37.9	7.1	1.5
1913	51.7	29.3	10.7	40.0	6.8	1.5
1914	49.6	31.9	11.0	42.9	6.1	1.4
1915	52.6	28.4	11.1	39.5	6.5	1.4
1916	49.3	33.5	10.0	43.5	6.1	1.1
1917	51.1	24.9	9.5	34.4	13.4	1.1
1918	48.3	28.2	8.6	36.8	14.2	.7
1919	45.7	34.1	8.6	42.7	10.9	.7
1920	55.8	21.3	10.1	31.4	12.1	.7
1921	55.0	20.8	10.9	31.7	12.3	1.0
1922	62.7	14.6	11.8	26.4	9.6	1.3
1923	65.8	11.8	10.9	22.7	10.3	1.2
1924	58.3	23.0	10.6	33.6	6.9	1.2
1925	58.0	22.8	10.7	33.5	7.4	1.1
1926	56.5	23.0	10.4	33.4	9.0	1.1
1927	59.6	19.8	10.5	30.3	8.9	1.2
1928	56.8	24.2	10.3	34.5	7.5	1.2
1929	54.8	24.9	10.2	35.1	9.0	1.1
1930	59.2	18.7	10.8	29.5	10.0	1.3
1931	61.1	14.3	11.7	26.0	11.0	1.9
1932	63.0	11.0	12.4	23.4	10.9	2.7
1933	60.9	14.2	11.7	25.9	9.8	3.4
1934	54.0	20.8	10.4	31.2	10.6	4.2

Table 24 (Concluded)

Percentage Distribution of Income Payments in Kansas by Type, 1900-1952

Year	Wages and salaries	Net income of farm operators	Other entrepre- neurial income	Total entrepre- neurial income	Property income	Other income
1935	53.0	23.0	10.6	33.6	10.3	3.1
1936	49.6	24.4	10.9	35.3	11.8	3.3
1937	55.0	21.3	10.3	31.6	11.4	2.0
1938	59.0	15.3	11.1	26.4	11.8	2.8
1939	58.0	16.1	10.5	26.6	11.3	4.1
1940	53.3	14.6	11.3	25.9	13.9	6.9
1941	50.8	20.7	10.9	31.6	12.4	5.2
1942	50.8	25.0	11.6	36.6	9.3	3.3
1943	56.5	19.2	11.8	31.0	8.5	4.0
1944	55.5	18.9	11.3	30.2	8.4	5.9
1945	52.2	18.1	12.5	30.6	9.0	8.2
1946	48.1	20.3	14.2	34.5	10.2	7.2
1947	44.9	28.7	11.5	40.2	9.6	5.3
1948	51.2	20.8	12.8	33.6	10.5	4.7
1949	56.5	10.4	16.7	27.1	11.2	5.2
1950	53.2	16.6	12.9	29.5	11.2	6.1
1951	59.0	12.1	13.2	25.3	10.6	5.1
1952	55.5	19.6	10.9	30.5	9.5	4.5

Source: Appendix Tables 1, 9, and 15.

Table 25

Net Income of Farm Operators, All Other Income, and Total Income, Actual and Trend,[a] Kansas, 1919-1940 (millions of dollars)

Year	Net income of farm operators		All other income		Total income	
	Actual	Trend	Actual	Trend	Actual	Trend
1919	447.8	246.0	865.0	754.4	1,312.8	1,000.4
1920	248.9	239.0	920.8	745.4	1,169.7	984.3
1921	198.9	231.9	758.6	736.4	957.5	968.3
1922	116.3	224.8	680.0	727.4	796.3	952.2
1923	90.7	217.8	678.4	718.4	769.1	936.1
1924	204.9	210.7	689.2	709.4	894.1	920.1
1925	211.2	203.7	717.0	700.4	928.2	904.0
1926	229.5	196.6	771.8	691.4	1,001.3	888.0
1927	179.4	189.5	724.4	682.4	903.8	871.9
1928	235.8	187.5	737.2	673.4	973.0	855.8
1929	258.9	175.4	782.7	664.4	1,041.6	839.8
1930	164.0	168.4	724.3	655.4	883.3	823.7
1931	101.3	161.3	609.7	646.4	711.0	807.7
1932	57.7	154.2	469.9	637.4	527.6	791.6
1933	71.5	147.2	434.7	628.4	506.2	775.5
1934	128.7	140.1	493.8	619.4	622.5	759.5
1935	155.5	133.1	522.6	610.4	678.1	743.4
1936	158.8	126.0	546.8	601.4	705.6	727.4
1937	161.6	118.9	601.2	592.4	762.8	711.3
1938	101.5	111.9	563.1	583.4	664.6	695.2
1939	110.5	104.8	580.3	574.4	690.8	679.2
1940	148.1	97.8	645.5	565.4	756.2	663.1

---

[a] Computed by least squares. Net income of farm operators $Y_c = 171.89 + (-3.53)X$; all other income $Y_c = 659.86 + (-4.50)X$. Origin = January 1, 1930. X = 6 months.

Source: Appendix Tables 1, 9, and 15.

Table 26

Net Income of Farm Operators, All other Income, and Total Income, Actual and Trend,[a] Kansas 1941-1952

(millions of dollars)

Year	Net income of farm operators		All other income		Total income	
	Actual	Trend	Actual	Trend	Actual	Trend
1941	201.4	304.0	772.3	980.8	973.7	1,284.8
1942	375.5	324.7	1,124.6	1,121.7	1,500.1	1,446.4
1943	349.8	345.4	1,473.8	1,262.6	1,823.6	1,608.0
1944	375.1	366.1	1,612.3	1,403.5	1,987.4	1,769.6
1945	348.8	386.8	1,580.9	1,544.3	1,929.3	1,931.2
1946	405.2	407.5	1,594.7	1,685.2	1,999.9	2,092.7
1947	687.4	428.2	1,711.7	1,826.1	2,399.1	2,254.3
1948	497.4	448.9	1,883.6	1,967.0	2,381.0	2,415.9
1949	335.5	469.6	1,936.5	2,107.9	2,272.0	2,577.5
1950	426.7	490.3	2,142.0	2,248.7	2,568.7	2,739.1
1951	344.2	511.0	2,503.2	2,389.6	2,847.4	2,900.6
1952	667.9	531.7	2,732.2	2,530.5	3,400.1	3,062.2

[a] Computed by least squares. Net income of farm operators $Y_c = 417.87 + 10.35X$; all other income $Y_c = 1755.65 + 70.44X$. Origin = January 1, 1947. $X = 6$ months.

Source: Appendix Table 15.

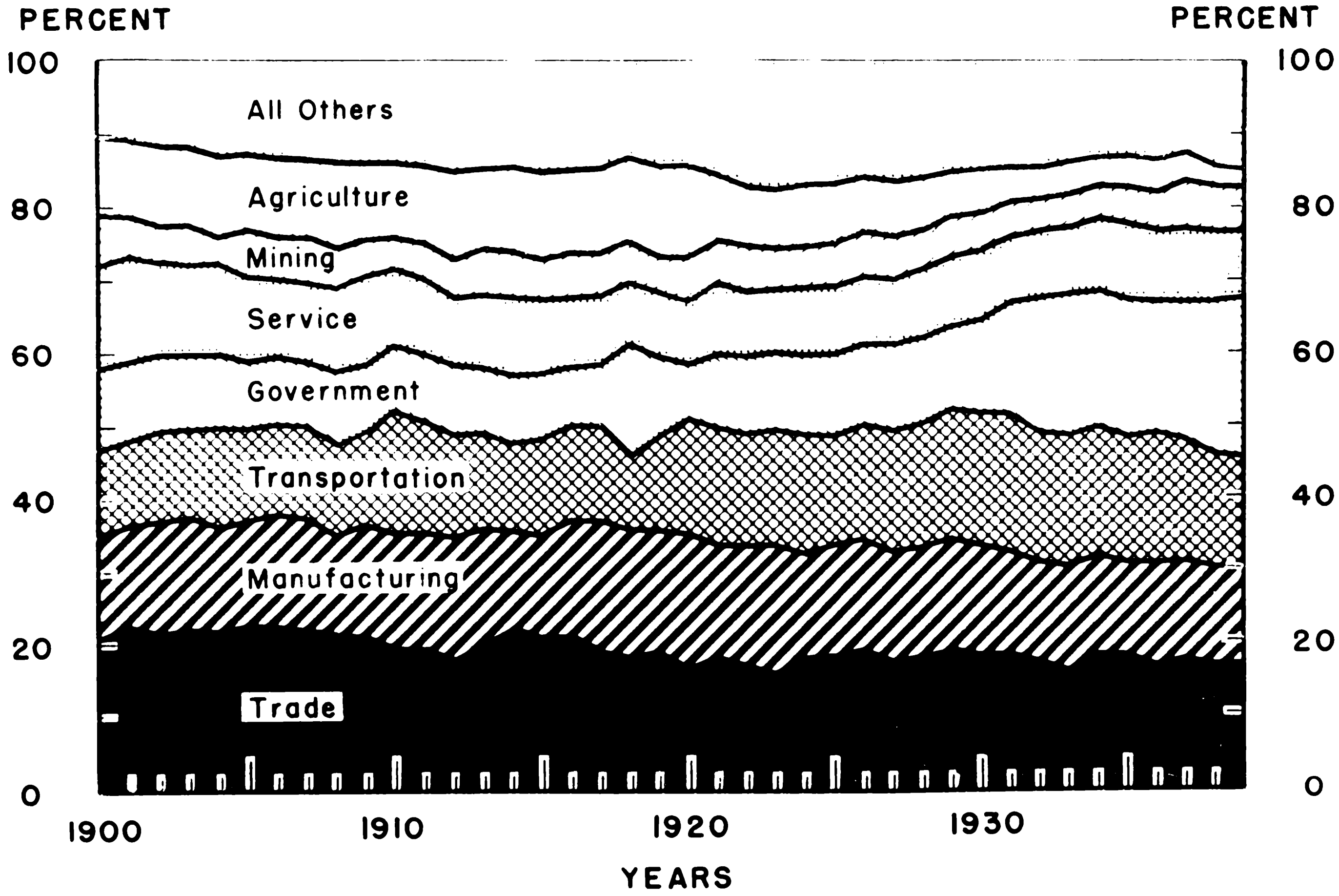
incomes were not consistent with the trend of the twenties, however, since the decline in nonagricultural income was much less severe than in agricultural income. It is evident that there is no direct connection between changes in the proportional shares of total income going to farm operators or employees and the per capita incomes of the farm and nonfarm populations.

For example, per capita farm income increased much more rapidly than nonfarm income between 1900-1918, yet the proportional share of farm to total income was on the decrease. From 1920 to 1929, farm income tended to be a gradually increasing percentage of the total, while on a per capita basis, farm income did not decrease as much as nonfarm income. For the period 1929-1939, farm income was a rapidly decreasing percentage of total income, yet per capita farm income declined even more sharply. During the forties, the proportional share of farm income tended to be larger than in the thirties, while per capita farm income also showed an average increase some 240 per cent greater than nonfarm income.

Changes in relative importance of industries can, to a certain extent, be observed by changes in percentages of total wages and salaries received. Figure 9 and Table 27 indicate that employee compensation in trade was a slowly declining percentage of all wages and salaries between 1900 and 1939. As previously observed, manufacturing failed to maintain its relative position after World War I. It is no surprise, therefore, to find that manufacturing wages were a smaller percentage of the total in 1929 than they had been in all but seven of the preceding years. Manufacturing wages continued to be a decreasing percentage of the total through 1939. Transportation has rather

Figure 9

PROPORTIONAL SHARES OF TOTAL WAGES AND SALARIES IN SELECTED INDUSTRIES, 1900-1939



Source: Table 27

Table 27

Percentage Distribution of Wages and Salaries by Industry, Kansas, 1900-1952

Year	Trade	Manufacturing	Transportation	Government	Service	Mining	Agriculture	Construction	Communication and public utilities	Finance	Miscellaneous
1900	20.9	13.8	12.1	11.3	14.1	6.7	10.5	3.0	.6	2.3	4.7
1901	22.6	13.8	11.8	10.6	14.5	5.3	10.5	3.2	.7	2.4	4.5
1902	21.6	15.2	12.5	10.4	12.9	4.9	10.9	3.6	.8	2.5	4.7
1903	22.1	15.2	12.3	9.0	12.7	5.4	10.6	3.7	.9	2.6	4.6
1904	21.9	14.3	13.9	9.9	12.3	3.8	10.9	4.2	1.1	2.9	4.6
1905	22.6	14.6	12.4	9.4	11.5	6.4	10.5	3.8	1.3	2.7	4.7
1906	22.6	15.4	12.3	9.4	10.6	5.6	10.8	4.2	1.4	2.9	4.8
1907	22.1	15.2	12.8	9.0	10.5	6.5	10.4	4.3	1.4	2.9	4.8
1908	21.3	13.9	12.5	9.7	11.5	5.6	11.6	4.3	1.7	3.2	4.8
1909	21.2	15.2	12.9	9.1	12.2	4.8	10.6	4.5	1.5	3.1	4.8
1910	19.5	15.9	16.8	8.8	10.7	4.1	10.1	4.3	1.6	3.1	5.0
1911	19.4	15.9	15.3	9.3	10.3	4.8	10.6	4.4	1.8	3.3	4.9
1912	17.9	16.8	14.0	9.6	9.2	5.5	11.8	4.8	2.0	3.6	4.8
1913	19.9	16.0	13.2	8.9	10.2	6.0	11.0	4.6	2.0	3.4	4.8
1914	22.2	13.5	12.1	9.0	11.0	6.0	11.6	4.5	2.1	3.3	4.7
1915	21.2	13.5	13.6	8.9	10.2	5.2	12.2	4.5	2.4	3.5	4.9
1916	20.9	16.0	13.1	7.9	9.7	6.2	11.2	4.6	2.2	3.3	4.9
1917	18.9	18.1	13.0	9.3	8.6	5.6	11.9	4.6	2.0	3.1	4.9
1918	18.2	17.6	10.1	15.1	8.5	5.4	11.8	4.3	2.0	2.8	4.3
1919	19.1	16.4	13.0	10.8	8.9	4.9	12.5	4.4	2.2	3.1	4.7

Table 27 (Cont'd)

Percentage Distribution of Wages and Salaries by Industry, Kansas, 1900-1952[a]

Year	Trade	Manufacturing	Transportation	Government	Service	Mining	Agriculture	Construction	Communication and public utilities	Finance	Miscellaneous
1920	16.7	18.2	15.8	7.5	8.8	6.0	12.7	3.8	2.4	3.0	5.0
1921	18.1	15.5	16.2	10.0	9.6	5.9	9.1	4.2	2.8	3.5	5.0
1922	16.8	16.7	15.3	10.8	8.8	6.0	8.3	5.3	3.0	3.9	5.1
1923	15.9	17.6	15.9	10.9	8.3	5.6	8.2	5.4	3.1	4.0	5.2
1924	18.0	14.3	16.3	10.9	9.3	5.5	8.7	5.2	3.1	3.9	4.9
1925	18.3	15.1	15.4	10.8	9.4	5.8	8.2	5.2	3.0	3.8	5.0
1926	19.0	15.3	15.8	10.8	9.5	5.9	7.6	4.8	3.1	3.6	4.9
1927	17.6	15.0	16.7	11.9	8.9	5.7	7.6	4.6	3.3	3.7	5.0
1928	18.4	14.7	17.1	11.8	9.3	5.4	7.2	4.1	3.5	3.6	5.0
1929	19.2	15.0	17.9	11.4	9.7	5.1	6.4	3.5	3.5	3.4	5.0
1930	18.5	14.9	18.3	12.9	9.5	4.9	6.0	2.9	3.6	3.4	5.2
1931	18.5	13.9	19.3	15.1	9.2	4.3	5.1	2.4	3.4	3.4	5.3
1932	17.5	13.4	17.9	18.7	9.1	4.0	4.7	2.0	3.6	3.7	5.5
1933	16.3	14.3	17.9	19.6	9.1	4.5	4.3	1.8	3.4	3.4	5.4
1934	18.4	13.6	17.8	18.7	9.8	4.4	4.1	1.8	3.4	3.1	4.8
1935	18.4	12.5	17.4	19.0	10.3	5.0	4.1	2.2	3.3	3.0	4.7
1936	17.0	13.8	18.1	18.2	9.5	5.5	4.3	2.2	3.4	3.0	5.0
1937	17.8	13.4	16.9	19.1	9.9	6.4	4.0	2.2	3.3	2.9	4.1
1938	17.0	13.1	16.0	21.2	9.1	5.3	3.9	2.8	3.5	3.3	4.8
1939	17.2	13.0	15.6	22.0	8.7	5.1	3.8	3.1	3.4	3.4	4.7

Table 27 (Concluded)

Percentage Distribution of Wages and Salaries by Industry, Kansas, 1900-1952[a]

Year	Trade	Manufacturing	Transportation	Government	Service	Mining	Agriculture	Construction	Communication and public utilities	Finance	Miscellaneous
1940	16.6	16.4	14.9	19.2	8.4	5.0	4.0	2.5	1.4	3.8	6.7
1941	15.9	19.6	14.5	16.8	7.4	4.6	4.9	4.5	1.3	3.5	6.3
1942	11.5	26.3	12.3	15.0	6.1	3.1	4.2	13.4	.9	2.4	4.7
1943	9.8	31.6	10.9	20.5	5.2	2.9	3.7	8.7	.8	1.9	4.3
1944	10.2	35.0	12.5	21.6	5.2	3.1	3.5	2.6	.8	1.8	4.1
1945	12.7	28.9	13.6	21.0	6.1	3.3	4.0	3.0	1.0	2.2	4.5
1946	18.0	19.4	15.6	17.8	7.4	3.8	4.7	4.2	1.4	2.9	4.7
1947	18.9	20.6	15.2	14.9	7.6	3.8	5.0	5.3	1.4	2.9	4.3
1948	19.3	20.0	14.6	15.2	7.4	4.1	4.7	6.0	1.5	2.8	3.9
1949	19.0	20.4	13.8	16.8	7.3	3.9	3.9	5.9	1.5	2.9	4.1
1950	19.3	22.5	12.5	16.1	7.4	3.8	3.3	6.0	1.5	3.3	4.0
1951	17.8	26.2	12.8	14.9	7.0	3.8	2.7	7.1	1.4	3.1	3.1
1952	17.2	28.4	12.0	15.4	6.8	3.6	2.6	6.6	1.5	3.1	2.7

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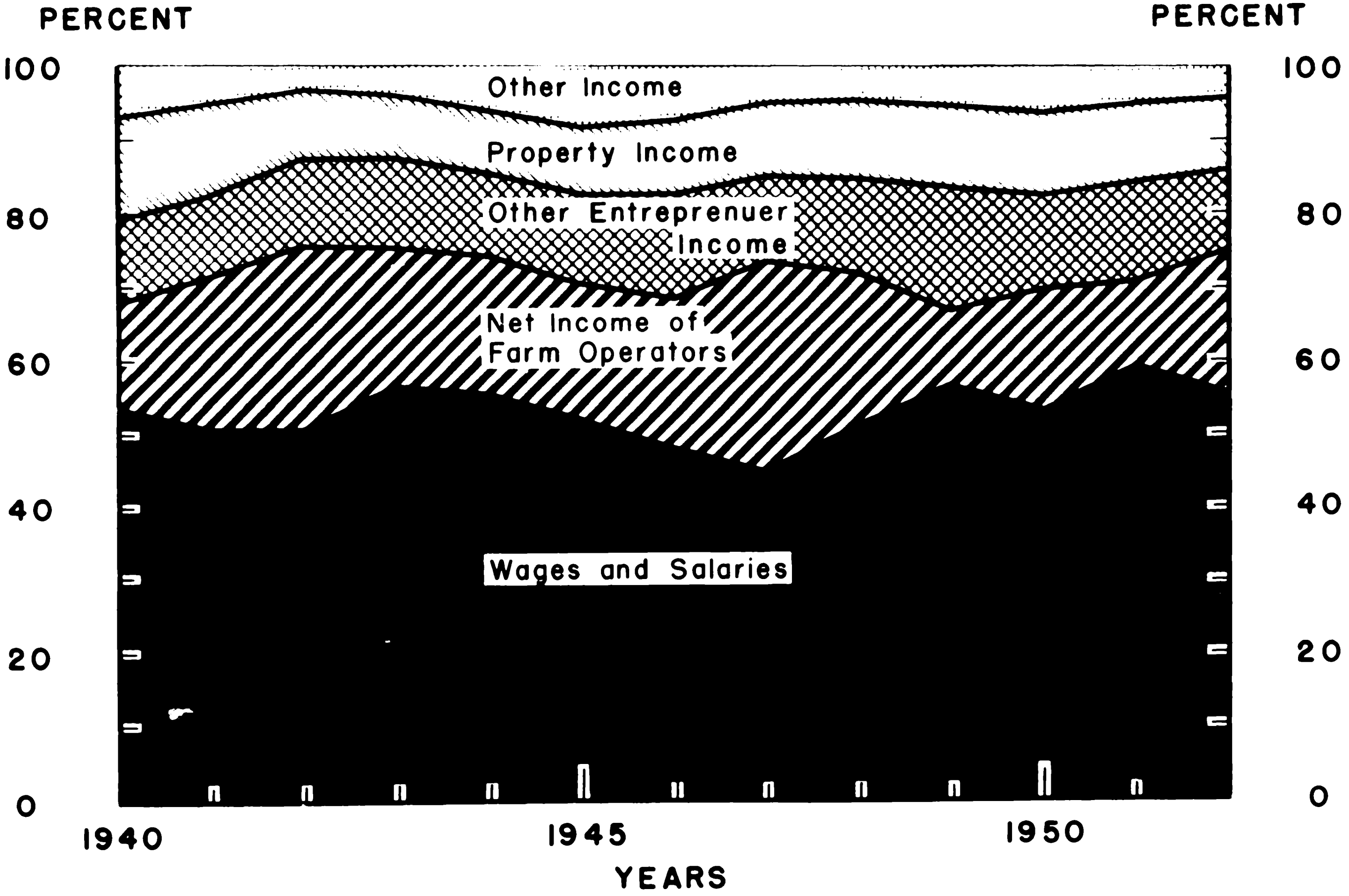
[a] Figures may not add to 100 due to rounding.

Source: Appendix Tables 2 and 15.

Figure 10

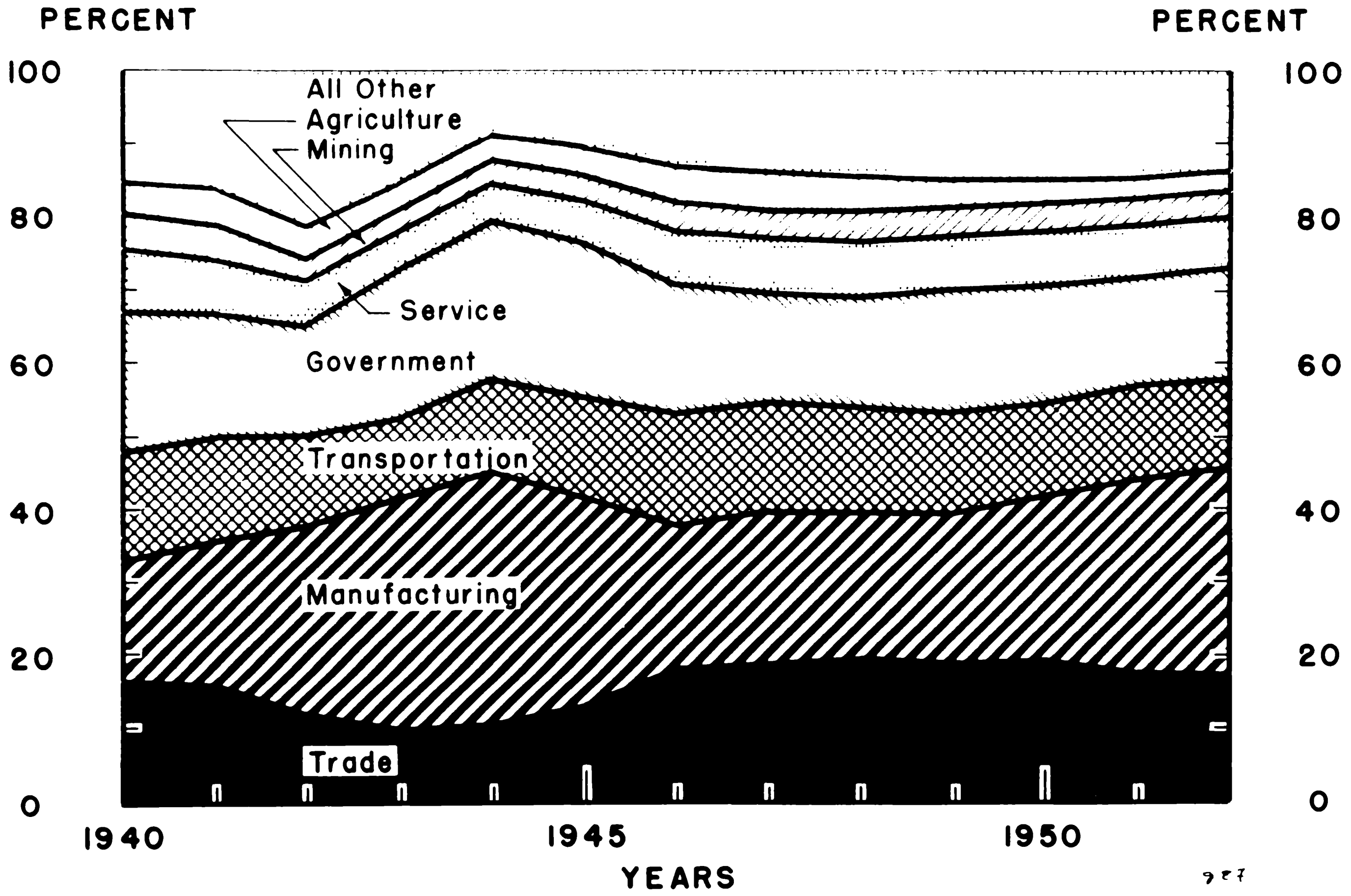
PROPORTIONAL SHARES OF TOTAL INCOME, BY TYPE, 1940-1952



Source: Table 24

Figure 11

PROPORTIONAL SHARES OF TOTAL WAGES AND SALARIES IN SELECTED INDUSTRIES, 1940-1952



Source Table 27

consistently increased its percentage. The increased importance of government to the economy is clearly visible, particularly after 1929. Agricultural wages maintained a fairly constant proportion of the total up through World War I, but have decreased steadily in importance until they constituted less than 4 per cent of all such compensation in 1939.

The data for 1940-1952 are not strictly comparable with the estimates for previous years because of certain differences in definition and concept between the present estimates and those of the Department of Commerce discussed in Chapter II. Therefore, separate charts have been prepared for these years.

It is difficult to detect any noteworthy changes in distribution of total income from Figure 10, other than those mentioned above in connection with proportional shares of net farm income and wage payments. Decreases in the proportion of wages and salaries can usually be attributed to extraordinary increases in farm income and vice versa. As for changes in percentage distribution of wages and salaries by industries, the impact of the war is more readily discernible (Figure 11). The decrease in importance of trade to a low of 9.8 per cent in 1943, the simultaneous increase in importance of manufacturing to a maximum of 35.0 per cent in 1944, are the most obvious to the eye. It is interesting to note that from the standpoint of wages and salaries (including military pay), the percentage which government constituted of the total increased very little from 1940 to 1944, 19.2 versus 21.6 per cent. Service has been a steadily declining percentage of the total since 1900, which might be somewhat of a surprise. Mining is also included with the industries whose wages and salaries constitute a declining percentage of the total.

CHAPTER IV

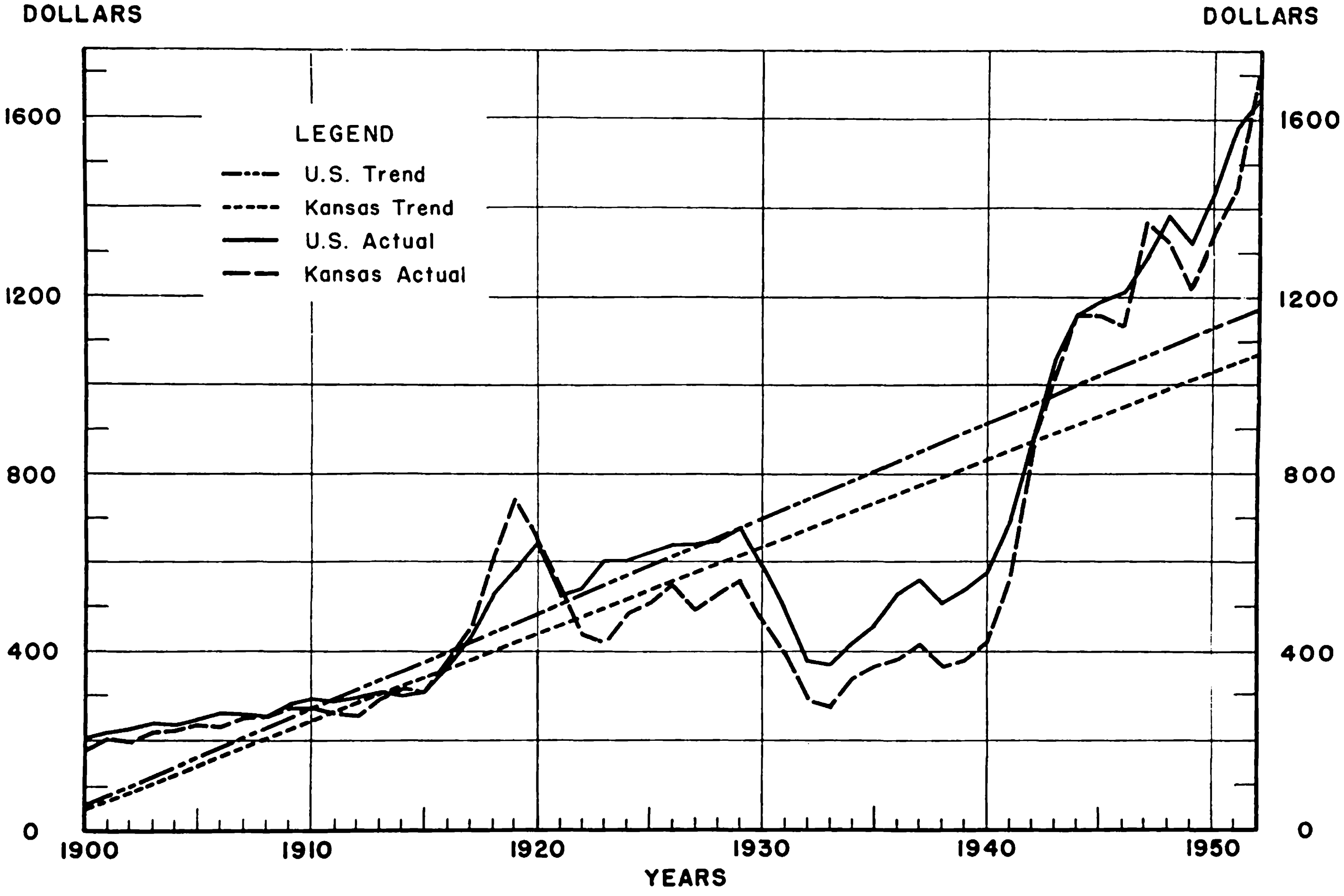
RETROSPECT AND PROSPECT

Kansas has had at least three major phases to its economic development during the twentieth century. Two periods were marked by relative gains judged by per capita income; one was an era of relative loss vis-à-vis the nation. Over-all, the picture is one of relative loss whether it be presented by diverging trend lines of per capita income as in Figure 12 (Table 28) or by plotting of the proportion of total population living in the state and the proportion of total income accruing to these residents as in Figure 13 (Table 29). It is in this sense that Kansas could aptly be called a "declining economy," even though per capita income of state residents has closely approximated or exceeded the national average for the past eleven years.

Figure 12 is particularly interesting because it shows that Kansas is subject to greater fluctuations, both in prosperity and depression, than is the nation as a whole. While it is generally recognized that states in which agriculture is a relatively important source of income are subject to more extreme cyclical fluctuations than are the more industrialized states, perhaps few realize that, even in 1940, Kansas total income payments were 24 per cent lower than in 1929—a decrease exceeded only by Nebraska with 26 per cent. For the United States, total income in 1940 was 8 per cent below 1929. On the upswing, however, Kansas was again in the vanguard with a gain of 155 per cent between 1940 and 1944. This gain was surpassed by only two states—Mississippi with 158 per cent and Washington with 185 per cent.

Figure 12

ACTUAL AND COMPUTED PER CAPITA INCOME PAYMENTS, KANSAS AND UNITED STATES, 1900-1952



Source: Table 28

Table 28

Actual and Computed[a] Per Capita Income Payments, Kansas and United States, 1900-1952 (in dollars)

	Kansas		United States	
Year	Actual per capita income	Computed per capita income	Actual per capita income	Computed per capita income
1900	179	48	205	58
1901	205	68	214	79
1902	200	88	224	100
1903	218	108	234	122
1904	222	127	233	143
1905	236	147	245	165
1906	229	167	260	186
1907	249	186	257	207
1908	248	206	252	229
1909	273	226	280	250
1910	271	246	293	222
1911	260	265	287	293
1912	254	285	296	314
1913	289	305	310	336
1914	318	324	301	357
1915	308	344	309	379
1916	385	364	364	400
1917	451	384	432	421
1918	609	403	527	443
1919	746	423	580	464
1920	657	443	644	486
1921	534	462	526	507
1922	441	482	543	528
1923	422	502	606	550
1924	488	522	605	571
1925	512	541	622	593
1926	549	561	639	614
1927	492	581	639	635
1928	529	600	647	657
1929	560	620	680	678
1930	475	640	596	700
1931	390	659	500	721
1932	289	679	380	742
1933	274	699	368	764
1934	337	719	420	785

Table 28 (Concluded)

Actual and Computed[a] Per Capita Income Payments, Kansas and United States, 1900-1952
(in dollars)

Year	Kansas		United States	
	Actual per capita income	Computed per capita income	Actual per capita income	Computed per capita income
1935	366	738	460	807
1936	381	758	531	828
1937	416	778	561	849
1938	366	797	509	871
1939	380	817	539	892
1940	423	837	575	914
1941	558	857	693	935
1942	863	876	876	956
1943	1,006	896	1,059	978
1944	1,164	916	1,160	999
1945	1,157	935	1,191	1,021
1946	1,133	955	1,211	1,042
1947	1,372	975	1,293	1,063
1948	1,326	995	1,383	1,085
1949	1,220	1,014	1,325	1,106
1950	1,349	1,034	1,440	1,128
1951	1,453	1,054	1,581	1,149
1952	1,698	1,073	1,639	1,170

[a] Computed by least squares. Kansas: $Y = 560.94 + 19.71X$; United States: $Y = 614.00 + 21.40X$. Origin = 1926.

Source: Robert F. Martin, National Income in the United States, 1799-1938, pp. 21, 87. (United States income, 1900-1919); Simon Kuznets, National Income and Its Composition, 1919-1938, pp. 322-323. (United States income, 1920-1928); Robert E. Graham, Jr., "State Income Payments in 1952," Survey of Current Business, August, 1953, p. 12. (United States income, 1929-1952; Kansas income, 1940-1952); United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1953, p. 13; Appendix Table 1; Kansas State Board of Agriculture, Thirty-Seventh Biennial Report, p. 62.

Table 29

Kansas Population and Income as a Percentage of the United States, Actual and Trend,[a] 1900-1952

Year	Percentage of United States income	Computed trend	Percentage of United States population	Computed trend
1900	1.656	1.816	1.898	1.928
1901	1.818	1.801	1.892	1.914
1902	1.652	1.786	1.851	1.900
1903	1.731	1.770	1.847	1.886
1904	1.774	1.755	1.868	1.872
1905	1.776	1.739	1.843	1.858
1906	1.666	1.724	1.887	1.844
1907	1.763	1.709	1.897	1.830
1908	1.836	1.693	1.868	1.816
1909	1.838	1.678	1.886	1.802
1910	1.700	1.662	1.835	1.788
1911	1.625	1.647	1.797	1.774
1912	1.500	1.632	1.751	1.760
1913	1.614	1.616	1.734	1.746
1914	1.785	1.601	1.687	1.732
1915	1.660	1.585	1.664	1.718
1916	1.781	1.570	1.682	1.704
1917	1.752	1.555	1.680	1.690
1918	1.917	1.539	1.659	1.676
1919	2.154	1.524	1.675	1.662
1920	1.707	1.508	1.672	1.648
1921	1.677	1.493	1.652	1.634
1922	1.333	1.478	1.642	1.620
1923	1.133	1.462	1.629	1.606
1924	1.294	1.447	1.607	1.592
1925	1.289	1.431	1.565	1.578
1926	1.334	1.416	1.553	1.564
1927	1.187	1.401	1.544	1.550
1928	1.248	1.385	1.525	1.536
1929	1.261	1.370	1.521	1.522
1930	1.205	1.354	1.504	1.508
1931	1.147	1.339	1.464	1.494
1932	1.112	1.324	1.452	1.480
1933	1.094	1.308	1.462	1.466
1934	1.174	1.293	1.454	1.452

Table 29 (Concluded)

Kansas Population and Income as a Percentage of the United States, Actual and Trend,[a] 1900-1952

Year	Percentage of United States income	Computed trend	Percentage of United States population	Computed trend
1935	1.158	1.277	1.450	1.438
1936	1.038	1.262	1.438	1.424
1937	1.056	1.247	1.416	1.410
1938	1.006	1.231	1.391	1.396
1939	.979	1.216	1.383	1.382
1940	.998	1.200	1.357	1.368
1941	1.055	1.185	1.312	1.354
1942	1.280	1.170	1.298	1.340
1943	1.286	1.154	1.351	1.326
1944	1.296	1.140	1.300	1.312
1945	1.227	1.123	1.267	1.298
1946	1.170	1.108	1.250	1.284
1947	1.294	1.093	1.219	1.270
1948	1.178	1.077	1.229	1.256
1949	1.155	1.062	1.253	1.242
1950	1.168	1.046	1.263	1.228
1951	1.168	1.031	1.271	1.214
1952	1.331	1.016	1.285	1.200

[a] Computed by least squares. Percentage of United States income $Y_c = 1.4160 + (-.0154)X$; percentage of United States population $Y_c = 1.5640 + (-.0140)X$. Origin = 1926. X = 1 year.

Source: Robert F. Martin, _National Income in the United States, 1799-1938_, pp. 21, 87; Simon Kuznets, _National Income and Its Composition, 1919-1938_, pp. 322-323; Robert E. Graham, Jr., "State Income Payments in 1952," _Survey of Current Business_, Vol. 33, No. 8, August, 1953, p. 12; United States Department of Commerce, Bureau of the Census, _Statistical Abstract of the United States, 1953_, pp. 13-14; Kansas State Board of Agriculture, _Thirty-Seventh Biennial Report_, p. 62; Appendix Table 1.

The national average was 97 per cent. In addition to the impact of soaring prices and high production in agriculture, Kansas was among the states where war production was exceptionally important in swelling the volume of individual incomes after 1940. The curtailment of war production immediately after V-J Day put Kansas among the states having a lower total income in 1945 than in 1944. The extent of this curtailment can be judged by the fact that 15 per cent of total income in 1944 had been from payrolls in "war" manufacturing industries. By the fourth quarter of 1945, this percentage had been reduced to 3.8 per cent.[64]

Kansas income payments in 1946 were 4 per cent above 1945, a gain considerably lower than the national average of 9 per cent. Total income in 1946 was 201 per cent of income in 1929—the average for the nation for the same period was 207 per cent. Thus, the Kansas gain was only 97 per cent of the national average. The year 1947 was an extraordinarily prosperous one for agriculture, with the result that Kansas income as well as that of adjoining states in this region made a steep advance. Consequently, a snapshot of Kansas' relative position among the states in 1947 shows it to have been 11 per cent above the national average instead of 3 per cent below as it had been the previous year insofar as comparative improvement from 1929 was concerned. Kansas income increased by 24 per cent from 1946 to 1947 as compared with only

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[64] Charles F. Schwartz and Robert E. Graham, Jr., "State Income Payments in 1945," Survey of Current Business, Vol. 26, No. 8, August, 1946, pp. 11-22.

10 per cent for the nation. Agriculture, always a more volatile source of income, is not only more important to Kansas and comparable states than it is elsewhere, but has also exhibited even more volatility in this particular region than in any other. This volatility is due, in part, to the fact that relatively "fixed" expenses—such as depreciation, interest, taxes, and rent—constitute a markedly higher proportion of total costs of production than in other areas.[65]

In the article cited above, Mr. Schwartz points out that regional trends in total income over the span from 1929 to 1947 were the product of developments during the two periods 1929-1940 and 1940-1947 for all regions except the Northwest—the region in which Kansas is located. As has frequently been observed throughout this study, this region's share of total national income declined from 1929 to 1940, but rose markedly in the latter period. This, then, is the one exception to continuity of regional trends in the United States during the past twenty years. The question naturally arises, which of the two periods is indicative of the true long-term forces at work in the region and state?

By 1947, many of the necessary post-war adjustments had been made. It should be very informative to review the changes which took place in Kansas from 1944 to 1947. Total income payments were up by 28 per cent, 3 per cent above the national average. All of this increase, however, could be attributed to agriculture, since nonagricultural income had increased by only 14 per cent in comparison with a 30 per cent increase for the nation. Kansas manufacturing payrolls decreased by 42 per cent, while national payrolls stayed at approximately their 1944 level. "War" manufacturing payrolls in Kansas were 74 per cent below their 1944 level, although similar payrolls in the nation were down only 37 per cent. This contraction in war payrolls was among the most severe in the country, being exceeded in only five states.[66]

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[65] Schwartz, "Regional Trends in Income Payments," Survey of Current Business, Vol. 28, No. 9, September, 1948, pp. 10-21.

Kansas agricultural income dropped from 687 million dollars in 1947 to 497 million in 1948 (Appendix Table 15). Consequently, total income declined slightly, although all other components of income continued to increase—total wages and salaries by as much as 10 per cent, slightly above the national average. Total income in the nation, meanwhile, increased by 9 per cent, which means that Kansas was again losing out relatively as far as percentage of total income was concerned.[67]

From 1948 to 1949, total income payments in the United States dropped by 2 per cent; Kansas income dropped 3 per cent during the same period to continue its relative loss as compared with the United States.[68] The strong note of recovery with which the year 1950 opened throughout the nation was sharply accelerated by developments following the outbreak of hostilities in Korea. Since both agriculture and war manufacturing were directly affected by these events, Kansas made slightly faster gains than the nation from 1949 to 1950 with an increase of 17 per cent in agricultural income compared with 6 per cent for the United States, and a gain of 14 per cent in manufacturing payrolls compared with 13 per cent for the nation. Nevertheless, the percentage change from 1929 to 1950 was only 157 per cent—less than the national average of 163 per cent.[69]

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[66] Schwartz and Graham, "State Income Payments in 1947," Survey of Current Business, Vol. 28, No. 8, August, 1948, pp. 10-21.

[67] Schwartz and Graham, "State Income Payments in 1948," Survey of Current Business, Vol. 29, No. 8, August, 1949, pp. 7-17.

[68] Schwartz and Graham, "State Income Payments in 1949," Survey of Current Business, Vol. 30, No. 8, August, 1950, pp. 11-22.

The year 1951 will long be remembered by Kansans. The vagaries of nature struck an unusually heavy blow at agricultural income through floods which damaged or ruined more than two million acres of crop land in the state. Total crop losses in flooded areas were estimated at more than 54 million dollars.[70] In addition, severe winterkilling of wheat in western counties, and damage due to excessive moisture combined to make crop production in 1951 the poorest since the dry years of the thirties.[71]

Graham has aptly pointed out that year-to-year fluctuations of total income payments in the Northwest (Kansas' geographical region) are, in the main, "diluted versions of erratic movements of farm income."[72] Considerable support for this opinion is provided by the relative movements of the main components of total income in 1951.

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[69] Graham, "State Income Payments in 1950," Survey of Current Business, Vol. 31, No. 8, August, 1951, pp. 11-21.

[70] Kansas State Board of Agriculture, Thirty-Eighth Biennial Report, 1952, pp. 52-53.

[71] *Ibid.*, p. 14.

[72] Graham, "State Income Payments in 1951," Survey of Current Business, Vol. 32, No. 8, August, 1952, p. 16.

Agricultural income was 17 per cent below the 1950 figure as contrasted with an increase of 19 per cent in the nation. Nonagricultural income, on the other hand, ran well ahead of the nation with an increase of 17 per cent, which was 6 per cent more than the national average. The most potent force in nonagricultural income was manufacturing, which, under the influence of war contracts, registered an increase of 47 per cent over the previous year, while the United States manufacturing payrolls were increasing by 18 per cent. In spite of all this relative gain in the nonagricultural segment, however, total income increased by only 11 per cent, 1 per cent less than the national average.[73]

Just as agricultural income was the dominating factor in the relative loss of Kansas in 1951, it was responsible for the phenomenal percentage increase in total income recorded in 1952. The increase of 20 per cent from 1951 to 1952 in Kansas income was the largest in the nation, the national average being 5 per cent. Farm income increased by 80 per cent, nonagricultural income by only 10 per cent—which was still 4 per cent above the national average. Kansas, with an increase of 22 per cent in manufacturing payrolls, was exceeded by only one state in this category also. It is small wonder, therefore, that Kansas per capita income exceeded that of the United States in 1952.[74]

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[73] Ibid., p. 14.

[74] Graham, "State Income Payments in 1952," Survey of Current Business, Vol. 33, No. 8, August, 1953, pp. 7-15.

Donald S. Murray, in a recent dissertation, sheds some light on cyclical variability of states where agricultural income is relatively important. Murray made his study on the basis of the estimates of others, namely Leven and the Department of Commerce. Thus, he was able to contrast relative positions of the various states in 1919-1921 with their positions in 1929-1938. He found an inverse association between the relative importance of agriculture and the relative size of per capita income payments. States classified in the agricultural group in 1919-1921 were generally the states that in the 1934-1939 period had become still more dependent upon agriculture as a source of income payments. The states most dependent upon agriculture were the ones whose percentage shares of total income payments of the nation displayed the greatest cyclical variations.[75]

Murray found that with regard to relative importance of various types of income, the following generalizations could be made: entrepreneurial withdrawals were directly associated, property income inversely associated, and compensation of employees not associated with the amplitude of cyclical fluctuations in per capita income payments. Both the average size of per capita income payments and inequality of the distribution of individual incomes by size among the states were inversely related to the cyclical variability of the proportionate share of the national income going to a given state.[76] The relative importance of property income such as interest, dividends, rents, and royalties, was associated directly with the relative size of the state's per capita income payments. The relative importance of service income—wage and salary payments combined with entrepreneurial withdrawals—was inversely related to the size of the per capita income payments.[77]

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[75] Donald S. Murray, Changes in the Distribution of Income by States, 1840-1938, p. ix.

[76] Idem.

What bearing do these observations have upon the Kansas economy? There seems to be little doubt but that Kansas will continue to be included among the agricultural states. In the recent period of war-created prosperity, the ratio of relative importance of Kansas farm income to United States farm income has exhibited an upward trend (Table 22). Although manufacturing wages and salaries have been increasing at a rapid rate, many of the largest payrolls are directly dependent upon defense contracts rather than peacetime economy for their continued existence. Such industries are not, therefore, the strongest possible bulwark against a downswing in income caused by unfavorable conditions in agriculture unless the adversity were limited exclusively to weather conditions. If agricultural prices fall in the absence of unusual war demand, agricultural income will be affected whether the government follows a "flexible" or "inflexible" price support policy. Kansas industry as now constituted will tend to accentuate the traditional wide fluctuations of an agricultural economy, since both are historically highly sensitive to threats of war or hopes of peace. Note that according to Murray's analysis, growth of manufacturing or growth of payrolls in any other industry *per se* is not an adequate counterbalance for the violent fluctuations of a state economy in which the influence of agriculture is strong. He found the relative importance of compensation of employees not to be associated with the amplitude of cyclical changes, presumably regardless of the industry in which earned.

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[77] *Ibid.*, p. xii.

To recapitulate, Kansas income, along with that of other agricultural states in the region, has historically fluctuated more violently than the national average during business cycles. The Department of Commerce has computed measures of sensitivity of income payments to changes in United States income payments, based on the period 1929-1940. These are stated as percentage changes in income in the state associated with a 10 per cent change in national income payments. The ten states most sensitive to national changes between 1929-1940 are listed in Table 30. These same states, with the exception of Iowa, Michigan, and Nevada, which are subject to considerably different influences than the states of the Northwestern region, have also been among the states showing the largest percentage of change in income between 1940 and 1944, or between 1940 and 1950. Although Kansas was ninth in sensitivity during the depression, it was the most sensitive state in the nation between 1940-1944 with an increase of 155 per cent in total income as compared with a 97 per cent increase for the United States.

There is no conclusive evidence of the development of any countercyclical forces in the state's economic pattern. Agriculture is not a decreasing ratio of total income insofar as the state is compared with the nation. If Murray is correct, the growth of the relative share of total income from wages and salaries offers little promise as to avoidance of more-than-average fluctuations, although, of course, per

Table 30

Comparative Sensitivity of State Income Payments to Changes in United States Total

State	Percentage change in income associated with a 10 per cent change in national income payments, 1929-1940	Percentage change in total income, 1940-1944	Percentage change in total income, 1940-1950
Iowa	14.8	85	203
Nebraska	14.6	124	245
South Dakota	14.3	114	257
Nevada	14.2	115	226
Arizona	13.5	139	295
North Dakota	13.4	136	242
Michigan	13.0	107	186
Idaho	13.0	125	229
Kansas	12.3	165	239
United States	--	97	186

Source: Clement Winston and Mabel A. Smith, "Sensitivity of State Income Payments to Nation's Total," *Survey of Current Business*, January, 1946, pp. 6-9; Charles F. Schwartz and Robert E. Graham, Jr., "State Income Payments in 1945," *Survey of Current Business*, Vol. 26, No. 8, August, 1946, p. 12; Robert E. Graham, Jr., "State Income Payments in 1950," *Survey of Current Business*, Vol. 31, No. 8, August, 1951, p. 12.

capita incomes would be higher at any stage of the cycle. Particularly, payrolls of the war manufacturing variety can do nothing but increase the state's vulnerability to downswings in the economic tempo of the nation—if such industries are as unstable as they have been heretofore.

It is possible that the period from V-J Day to the outbreak of the Korean conflict marked the last sharp curtailment of war production for many years. Developments in nuclear fission are proceeding so rapidly that any attempt to envision what effect future changes in strategy and weapons will have upon the Kansas economy seems completely futile. It would appear, however, that even if national expenditures for war are maintained or increased, the share of the state in this total will be subject to great change and fluctuation. The granting or cancellation of war contracts is due to arbitrary administrative decision for noneconomic reasons, whereas ordinary manufacturing payrolls would not change drastically except for changes in basic underlying economic forces. Therefore, even if the future cannot be predicted with any degree of certainty from past developments, it is probable that the importance of war industries in Kansas will be a contributing rather than a counterbalancing factor to the fluctuations inherent in a state of this region where agricultural income is relatively important.

As for Murray's finding that property income is directly associated with amplitude of cyclical variations, there has been no change in the relative position of the state between 1929 and 1952. Kansas was 26th among the states in its percentage of property income in 1929, and it was 26th in 1952. Property income is far less important as a source of income throughout the United States currently than it was in 1929.

It constituted 18.5 per cent of the national income payments in 1929 as compared with 10.5 per cent in 1952. Corresponding percentages for Kansas were 13.9 in 1929 and 9.5 in 1952.(78)

Therefore, in all probability, Kansas will continue to prosper with the most prosperous, and suffer with the most depressed depending upon the vagaries of the weather as well as upon economic conditions throughout the nation. There is little reason to believe that the downward trends of income and population as percentages of national totals (Figure 13) have reached their lowest points. Meanwhile, statistics of income—particularly on a per capita basis—fluctuate widely, for when agricultural income is an important part of the total, large changes in income can come without any corresponding short-run change in population. This is less likely to be true in manufacturing or industrial states.

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[78] Schwartz, "State Income Payments in 1944," Survey of Current Business, Vol. 25, No. 8, August, 1945, pp. 10-18; Graham, "State Income Payments in 1952," op. cit., p. 15.

APPENDIX

Appendix Table 1

Income Payments Received by Kansans by Type of Payment, 1900-1939
(millions of dollars)

Year	Wages and salaries	Entrepre-neurial income	Property income	Other income	Total income
1900	$116.9	$119.2	$ 16.0	$ 6.2	$258.3
1901	128.4	150.1	17.0	6.1	301.6
1902	134.9	134.0	18.3	6.0	293.2
1903	149.5	151.0	18.9	5.7	325.1
1904	157.9	158.0	18.8	5.7	340.4
1905	175.0	163.8	20.0	5.7	364.5
1906	181.3	160.1	22.7	5.5	369.6
1907	200.0	181.4	24.7	5.4	411.5
1908	191.3	188.6	24.5	6.5	410.9
1909	220.0	212.6	26.2	6.9	465.7
1910	235.6	189.3	28.4	6.7	460.0
1911	227.5	174.8	29.3	6.2	437.8
1912	226.6	160.2	30.4	5.9	423.1
1913	251.9	195.2	32.5	6.9	486.5
1914	264.2	228.9	32.6	6.8	532.5
1915	271.4	204.2	33.8	6.5	515.9
1916	325.9	287.9	40.7	6.3	660.8
1917	401.1	270.7	105.3	6.4	783.5
1918	511.0	389.1	149.9	7.1	1,057.1
1919	599.4	561.0	143.4	9.0	1,312.8
1920	651.8	367.5	141.9	8.5	1,169.7
1921	525.7	302.7	118.6	10.5	957.5
1922	498.7	210.7	76.8	10.1	796.3
1923	505.7	174.9	79.0	9.5	769.1
1924	521.6	300.8	61.4	10.3	894.1
1925	538.2	311.4	68.5	10.1	928.2
1926	565.5	334.1	91.1	10.6	1,001.3
1927	538.2	274.3	80.3	11.0	903.8
1928	552.5	335.7	73.3	11.5	973.0
1929	572.4	363.9	93.5	11.8	1,041.6
1930	524.8	259.1	87.6	11.8	883.3
1931	436.1	184.2	77.7	13.0	711.0
1932	333.8	122.5	57.1	14.2	527.6
1933	309.4	130.1	49.4	17.3	506.2
1934	337.3	193.8	65.7	25.7	622.5

Appendix Table 1 (Concluded)

Income Payments Received by Kansans by Type of Payment, 1900-1939
(millions of dollars)

Year	Wages and salaries	Entrepreneurial income	Property income	Other income	Total income
1935	$361.0	$226.5	$ 69.5	$ 21.1	$678.1
1936	377.3	230.1	77.2	21.0	705.6
1937	420.9	240.1	86.8	15.0	762.8
1938	393.4	174.8	77.7	18.7	664.6
1939	401.9	182.9	78.0	28.0	690.8

Appendix Table 2

Wage and Salary Payments by Industry, Kansas, 1900-1939
(millions of dollars)

Year	Agriculture	Mining	Manufacturing	Construction	Transportation	Communications and public utilities	Trade	Finance	Government	Service	Miscellaneous	Total wages and salaries
1900	$12.3	$ 7.8	$ 16.2	$ 3.5	$ 14.1	$ 0.7	$ 24.4	$ 2.7	$13.2	$16.5	$ 5.5	$116.9
1901	13.5	6.8	17.7	4.1	15.2	1.0	29.0	3.1	13.6	18.6	5.8	128.4
1902	14.7	6.6	20.6	4.9	16.8	1.1	29.1	3.4	14.1	17.3	6.3	134.9
1903	15.9	8.1	22.7	5.5	18.3	1.3	33.1	3.9	14.8	19.0	6.9	149.5
1904	17.2	6.1	22.6	6.7	22.0	1.8	34.6	4.6	15.6	19.4	7.3	157.9
1905	18.4	11.2	25.6	6.7	21.7	2.2	39.5	4.8	16.5	20.1	8.3	175.0
1906	19.6	10.2	28.0	7.6	22.3	2.5	40.9	5.3	17.1	19.1	8.7	181.3
1907	20.9	13.0	30.5	8.6	25.5	2.8	44.2	5.9	18.0	21.0	9.6	200.0
1908	22.1	10.8	26.6	8.2	24.0	3.2	40.7	6.1	18.5	22.0	9.1	191.3
1909	23.3	10.6	33.3	10.0	28.4	3.4	46.7	6.9	20.2	26.7	10.5	220.0
1910	23.9	9.7	37.4	10.2	39.7	3.8	46.0	7.4	20.6	25.2	11.7	235.6
1911	24.1	10.9	36.1	10.0	34.8	4.2	44.2	7.5	21.1	23.5	11.1	227.5
1912	26.6	12.6	38.0	10.8	31.7	4.6	40.6	8.1	21.8	20.8	11.0	226.6
1913	27.5	15.1	40.4	11.6	33.2	5.0	50.1	8.6	22.5	25.7	12.2	251.9
1914	30.4	16.0	35.5	11.8	32.0	5.6	58.7	8.8	23.9	29.0	12.5	264.2
1915	33.0	14.3	36.5	12.2	36.9	6.5	57.6	9.4	24.3	27.5	13.2	271.4
1916	36.8	19.9	52.0	14.9	42.7	7.3	68.1	10.6	26.0	31.7	15.9	325.9
1917	47.6	22.4	72.7	18.6	52.0	8.0	75.8	12.3	37.2	34.8	19.7	401.1
1918	60.3	27.2	89.5	21.8	51.8	10.0	93.2	14.3	77.3	43.6	22.0	511.0
1919	75.4	29.3	98.2	26.5	78.0	13.1	114.6	18.6	64.4	53.4	27.9	599.4

Appendix Table 2 (Concluded)

Wage and Salary Payments by Industry, Kansas, 1900-1939
(millions of dollars)

Year	Agriculture	Mining	Manufacturing	Construction	Transportation	Communications and public utilities	Trade	Finance	Government	Service	Miscellaneous	Total wages and salaries
1920	$83.0	$38.6	$118.8	$24.9	$103.0	$15.4	$108.8	$20.1	$48.8	$57.6	$32.8	$651.8
1921	47.9	31.4	81.3	22.1	85.3	14.7	95.1	18.6	52.9	50.0	26.4	525.7
1922	41.1	29.9	83.2	26.5	76.7	14.8	83.7	19.6	53.8	43.8	25.6	498.7
1923	41.4	28.6	88.7	27.2	80.6	15.5	80.6	20.0	55.0	41.9	26.2	505.7
1924	45.3	28.7	74.7	26.9	84.6	16.1	94.0	20.1	57.0	48.6	25.6	521.6
1925	43.7	31.2	81.1	28.0	82.7	16.4	98.6	20.7	58.4	50.7	26.7	538.2
1926	43.4	33.3	86.5	26.9	89.7	17.7	107.3	20.5	59.7	54.8	27.8	565.5
1927	41.3	30.5	80.9	24.7	89.9	17.9	94.6	19.8	63.8	48.0	26.8	538.2
1928	39.4	29.9	81.4	22.5	94.3	19.1	101.7	20.0	65.4	51.3	27.5	552.5
1929	36.4	29.0	85.2	19.6	101.4	19.9	109.2	23.8	65.1	54.6	28.2	572.4
1930	31.5	25.3	77.6	14.5	95.4	18.9	96.2	21.9	67.2	49.2	27.1	524.8
1931	22.3	18.6	60.3	10.4	83.2	14.8	80.0	18.6	65.5	39.5	22.9	436.1
1932	15.5	13.4	44.4	6.5	59.1	11.8	57.8	15.3	61.9	29.9	18.2	333.8
1933	13.3	13.6	43.9	5.5	54.8	10.5	49.8	13.3	60.2	27.9	16.6	309.4
1934	13.6	14.7	45.7	6.1	59.3	11.4	61.4	13.5	62.6	32.9	16.1	337.3
1935	14.8	17.6	44.7	8.0	62.4	11.9	65.8	14.0	68.1	36.9	16.8	361.0
1936	16.0	20.6	51.7	8.2	67.4	12.7	63.5	14.9	68.1	35.6	18.6	377.3
1937	16.6	26.5	56.1	9.2	70.5	13.9	74.2	15.7	79.5	41.6	17.1	420.0
1938	15.2	20.8	51.1	11.0	62.1	13.7	66.5	16.0	83.0	35.3	18.7	393.4
1939	15.3	20.3	51.9	12.2	62.0	13.6	68.6	16.8	87.7	34.7	18.8	401.9

Appendix Table 3

Wage and Salary Payments in the Mineral Industries, Kansas, 1900-1939
(millions of dollars)

Year	Bituminous coal	Miscellaneous minerals	Petroleum and natural gas	All mineral industries
1900	$6.0	$1.8	$ ---	$ 7.8
1901	5.2	1.5	0.1	6.8
1902	5.1	1.3	0.2	6.6
1903	6.2	1.3	0.6	8.1
1904	3.3	1.4	1.4	6.1
1905	8.0	1.4	1.8	11.2
1906	6.4	2.2	1.6	10.2
1907	9.5	2.0	1.5	13.0
1908	8.2	1.4	1.2	10.8
1909	8.4	1.1	1.1	10.6
1910	7.5	1.2	1.0	9.7
1911	8.7	1.2	1.0	10.9
1912	10.0	1.3	1.3	12.6
1913	11.3	1.3	2.5	15.1
1914	11.7	1.4	2.9	16.0
1915	9.7	1.7	2.9	14.3
1916	11.0	2.0	6.9	19.9
1917	11.1	2.2	9.1	22.4
1918	12.4	2.5	12.3	27.2
1919	10.8	2.7	15.8	29.3
1920	13.4	3.9	21.3	38.6
1921	9.7	3.5	18.2	31.4
1922	8.1	3.5	18.3	29.9
1923	7.3	5.9	15.4	28.6
1924	6.8	6.4	15.5	28.7
1925	6.5	6.4	18.3	31.2
1926	6.5	6.5	20.3	33.3
1927	5.3	6.2	19.0	30.5
1928	4.7	5.9	19.3	29.9
1929	3.8	5.6	19.6	29.0
1930	2.9	3.6	18.8	25.3
1931	2.0	1.6	15.0	18.6
1932	1.8	0.9	10.7	13.4
1933	2.0	1.1	10.5	13.6
1934	2.2	1.1	11.4	14.7
1935	2.6	1.8	13.2	17.6
1936	2.8	2.9	14.9	20.6
1937	2.8	3.3	20.4	26.5
1938	1.7	2.8	16.3	20.8
1939	2.2	3.0	15.1	20.3

Appendix Table 4

Wage and Salary Payments in Transportation, Kansas, 1900-1939
(millions of dollars)

	Steam railways, Pullman and Railway Express	Local railways and bus lines	Highway freight and passenger	Total
1900	$14.1	$---	$ ---	$ 14.1
1901	15.1	0.1	---	15.2
1902	16.6	0.2	---	16.8
1903	18.1	0.2	---	18.3
1904	21.7	0.3	---	22.0
1905	21.4	0.3	---	21.7
1906	21.9	0.4	---	22.3
1907	25.0	0.5	---	25.5
1908	23.5	0.5	---	24.0
1909	27.8	0.6	---	28.4
1910	39.0	0.7	---	39.7
1911	34.0	0.8	---	34.8
1912	30.8	0.9	---	31.7
1913	32.2	1.0	---	33.2
1914	31.0	1.0	---	32.0
1915	35.8	1.1	---	36.9
1916	41.5	1.2	---	42.7
1917	50.8	1.2	---	52.0
1918	50.5	1.3	---	51.8
1919	76.5	1.5	---	78.0
1920	101.4	1.6	---	103.0
1921	83.1	1.7	0.5	85.3
1922	72.9	1.8	2.0	76.7
1923	75.5	1.7	3.4	80.6
1924	78.1	1.6	4.9	84.6
1925	74.8	1.6	6.3	82.7
1926	78.7	1.5	7.5	87.7
1927	79.6	1.4	8.9	89.9
1928	82.4	1.3	10.6	94.3
1929	87.2	1.2	13.0	101.4
1930	81.2	1.1	13.1	95.4
1931	70.0	1.0	12.2	83.2
1932	48.4	0.9	9.8	59.1
1933	44.7	0.8	9.3	54.8
1934	48.4	0.8	10.1	59.3
1935	50.7	0.7	11.0	62.4
1936	55.0	0.7	11.7	67.4
1937	57.1	0.6	12.8	70.5
1938	49.4	0.6	12.1	62.1
1939	49.1	0.5	12.4	62.0

Appendix Table 5

Wage and Salary Payments in Communications and Public Utilities, Kansas 1900-1939 (millions of dollars)

Year	Telephone companies	Telegraph companies	Electric companies	Gas companies	Total
1900	$0.2	$0.3	$0.1	$0.1	$ 0.7
1901	0.3	0.3	0.1	0.3	1.0
1902	0.3	0.3	0.2	0.3	1.1
1903	0.4	0.3	0.2	0.4	1.3
1904	0.6	0.3	0.3	0.6	1.8
1905	0.7	0.3	0.3	0.9	2.2
1906	0.9	0.3	0.3	1.0	2.5
1907	1.0	0.3	0.4	1.1	2.8
1908	1.2	0.3	0.5	1.2	3.2
1909	1.3	0.3	0.5	1.3	3.4
1910	1.4	0.4	0.6	1.4	3.8
1911	1.5	0.4	0.7	1.6	4.2
1912	1.7	0.4	0.8	1.7	4.6
1913	1.8	0.4	0.9	1.9	5.0
1914	2.1	0.4	1.0	2.1	5.6
1915	2.5	0.6	1.2	2.2	6.5
1916	2.9	0.7	1.3	2.4	7.3
1917	3.4	0.7	1.4	2.5	8.0
1918	4.2	1.0	1.7	3.1	10.0
1919	5.7	1.4	1.8	4.2	13.1
1920	7.3	1.8	2.1	4.2	15.4
1921	7.7	1.6	2.5	2.9	14.7
1922	7.8	1.5	3.0	2.5	14.8
1923	8.7	1.5	3.1	2.2	15.5
1924	8.9	1.7	3.7	1.8	16.1
1925	8.9	1.7	4.0	1.8	16.4
1926	9.1	2.0	4.5	2.1	17.7
1927	8.8	2.0	4.8	2.3	17.9
1928	8.9	2.1	5.6	2.5	19.1
1929	9.2	2.5	5.6	2.6	19.9
1930	8.4	2.7	4.9	2.9	18.9
1931	6.1	2.4	3.4	2.9	14.8
1932	5.1	1.7	2.6	2.4	11.8
1933	4.4	1.5	2.3	2.3	10.5
1934	4.7	1.5	2.5	2.7	11.4
1935	4.7	1.5	2.7	3.0	11.9
1936	5.0	1.5	2.9	3.3	12.7
1937	5.5	1.6	3.3	3.5	13.9
1938	5.6	1.4	3.3	3.4	13.7
1939	5.6	1.3	3.3	3.4	13.6

Appendix Table 6

Wage and Salary Payments in Finance, Kansas, 1900-1939
(millions of dollars)

Year	Banks	Financial institutions other than banks	Insurance	Real estate	Total
1900	$1.2	$---	$0.6	$0.9	$ 2.7
1901	1.4	---	0.7	1.0	3.1
1902	1.5	---	0.7	1.2	3.4
1903	1.7	---	0.8	1.4	3.9
1904	1.9	---	1.0	1.7	4.6
1905	2.0	---	1.1	1.7	4.8
1906	2.3	---	1.1	1.9	5.3
1907	2.6	---	1.2	2.1	5.9
1908	2.8	---	1.3	2.0	6.1
1909	3.0	---	1.4	2.5	6.9
1910	3.4	---	1.5	2.5	7.4
1911	3.5	---	1.5	2.5	7.5
1912	3.7	---	1.7	2.7	8.1
1913	3.9	---	1.8	2.9	8.6
1914	4.0	---	1.9	2.9	8.8
1915	4.1	---	2.3	3.0	9.4
1916	4.3	---	2.6	3.7	10.6
1917	4.8	---	2.9	4.6	12.3
1918	5.3	---	3.6	5.4	14.3
1919	6.4	---	5.6	6.6	18.6
1920	7.9	---	6.0	6.2	20.1
1921	8.5	---	4.6	5.5	18.6
1922	8.2	---	4.8	6.6	19.6
1923	8.0	---	5.2	6.8	20.0
1924	8.0	---	5.4	6.7	20.1
1925	7.8	---	5.9	7.0	20.7
1926	7.6	---	6.2	6.7	20.5
1927	7.5	---	6.2	6.1	19.8
1928	7.7	---	6.7	5.6	20.0
1929	7.7	4.5	6.7	4.9	23.8
1930	7.6	4.4	6.3	3.6	21.9
1931	6.9	3.6	5.5	2.6	18.6
1932	5.8	3.2	4.7	1.6	15.3
1933	4.7	3.0	4.2	1.4	13.3
1934	4.5	3.0	4.5	1.5	13.5
1935	4.4	3.1	4.6	1.9	14.0
1936	4.5	3.6	4.8	2.0	14.9
1937	4.6	3.8	5.0	2.3	15.7
1938	5.0	3.3	5.0	2.7	16.0
1939	5.8	3.2	4.8	3.0	16.8

Appendix Table 7

Wage and Salary Payments in Government, Kansas, 1900-1939
(millions of dollars)

	Federal-General Government				State and Local-General Government					
Year	Post office	Military and miscellaneous civilian	Total federal	Federal and state work relief	State public education	State non-school	Local government	School districts	Total state and local	Grand total
1900	$1.0	$ 2.5	$ 3.5	$ ---	$0.6	$1.8	$ 4.1	$ 3.2	$ 9.7	$13.2
1901	1.1	2.6	3.7	---	0.6	1.8	4.3	3.2	9.9	13.6
1902	1.3	2.7	4.0	---	0.6	1.8	4.4	3.3	10.1	14.1
1903	1.6	2.9	4.5	---	0.6	1.8	4.4	3.5	10.3	14.8
1904	2.0	3.0	5.0	---	0.6	1.8	4.5	3.7	10.6	15.6
1905	2.3	3.2	5.5	---	0.7	1.8	4.6	3.9	11.0	16.5
1906	2.5	3.3	5.8	---	0.7	1.8	4.7	4.1	11.3	17.1
1907	2.7	3.5	6.2	---	0.8	1.9	4.7	4.4	11.8	18.0
1908	2.9	3.6	6.5	---	0.8	1.8	4.6	4.8	12.0	18.5
1909	3.1	4.3	7.4	---	0.9	1.9	4.7	5.3	12.8	20.2
1910	3.3	4.2	7.5	---	0.9	1.8	4.6	5.8	13.1	20.6
1911	3.4	4.1	7.5	---	0.9	1.8	4.7	6.2	13.6	21.1
1912	3.5	4.1	7.6	---	1.0	1.7	4.7	6.8	14.2	21.8
1913	3.6	4.1	7.7	---	1.0	1.7	4.9	7.2	14.8	22.5
1914	3.9	4.4	8.3	---	1.2	1.6	4.9	7.9	15.6	23.9
1915	3.9	4.6	8.5	---	1.4	1.6	4.9	7.9	15.8	24.3
1916	4.0	5.2	9.2	---	1.6	1.5	5.3	8.4	16.8	26.0
1917	4.3	14.2	18.5	---	1.6	1.8	6.3	9.0	18.7	37.2
1918	4.5	52.6	57.1	---	1.6	2.0	7.1	9.5	20.2	77.3
1919	5.4	36.3	41.7	---	1.7	2.1	7.9	11.0	22.7	64.4

Appendix Table 7 (Concluded)

Wage and Salary Payments in Government, Kansas, 1900-1939
(millions of dollars)

Year	Federal-General Government			Federal and state work relief	State and Local-General Government					Grand total
	Post office	Military and miscellaneous civilian	Total federal		State public education	State non-school	Local government	School districts	Total state and local	
1920	$6.5	$16.2	$22.7	$ ---	$2.2	$2.4	$ 8.5	$13.0	$26.1	$48.8
1921	7.2	14.3	21.5	---	2.6	2.6	9.0	17.2	31.4	52.9
1922	7.3	12.2	19.5	---	3.0	2.8	9.5	19.0	34.3	53.8
1923	7.5	11.4	18.9	---	3.0	3.3	10.4	19.4	36.1	55.0
1924	7.7	11.0	18.7	---	3.3	3.6	10.9	20.5	38.3	57.0
1925	8.1	10.9	19.0	---	3.2	3.8	11.2	21.2	39.4	58.4
1926	8.5	11.2	19.7	---	3.2	3.7	11.1	22.0	40.0	59.7
1927	8.6	11.9	20.5	---	3.5	4.5	12.4	22.9	43.3	63.8
1928	8.7	12.2	20.9	---	3.5	4.8	12.9	23.3	44.5	65.4
1929	8.8	12.2	21.0	---	3.5	5.0	12.7	22.9	44.1	65.1
1930	8.8	12.6	21.4	---	3.6	4.9	13.6	23.7	45.8	67.2
1931	8.8	12.3	21.1	---	3.5	5.1	12.6	23.2	44.4	65.5
1932	8.7	11.4	20.1	---	3.3	4.8	12.7	21.0	41.8	61.9
1933	7.9	11.3	19.2	3.5	3.3	4.6	11.3	18.3	37.5	60.2
1934	7.3	10.6	17.9	9.5	3.3	4.6	11.7	15.6	35.2	62.6
1935	7.0	11.0	18.0	13.0	3.4	5.1	12.6	16.0	37.1	68.1
1936	7.3	11.3	18.6	11.5	3.4	5.7	12.4	16.6	38.1	68.1
1937	7.4	11.9	19.3	20.1	3.3	7.0	12.7	17.1	40.1	79.5
1938	7.3	13.1	20.4	17.7	4.8	8.1	13.3	18.7	44.9	83.0
1939	7.5	13.2	20.7	21.6	5.0	8.1	13.7	18.6	45.4	87.7

Appendix Table 8

Net Entrepreneurial Income by Industry, Kansas, 1900-1939
(millions of dollars)

Year	Agri- culture	Mining	Manufac- turing	Con- struction	Trade	Finance	Service	Miscel- laneous	Total entre- preneurial income
1900	$ 87.9	$0.1	$1.6	$0.6	$12.6	$0.8	$11.8	$ 3.8	$119.2
1901	115.0	0.2	1.7	0.7	14.5	0.9	13.3	3.8	150.1
1902	99.8	0.2	1.8	0.8	13.9	1.1	12.4	4.0	134.0
1903	113.2	0.3	1.9	0.9	15.6	1.1	13.6	4.4	151.0
1904	118.8	0.2	1.9	1.1	16.1	1.3	13.9	4.7	158.0
1905	122.3	0.5	2.0	1.1	17.1	1.4	14.4	5.0	163.8
1906	119.5	0.4	2.1	1.2	16.6	1.5	13.7	5.1	160.1
1907	138.2	0.6	2.2	1.4	18.5	1.9	15.1	3.5	181.4
1908	142.3	0.6	2.1	1.3	18.8	1.7	15.7	6.1	188.6
1909	160.9	0.6	2.3	1.6	19.7	2.0	19.1	6.4	212.6
1910	138.6	0.6	2.4	1.6	19.1	2.2	18.1	6.7	189.3
1911	127.0	0.7	2.3	1.6	18.1	2.1	16.8	6.2	174.8
1912	116.5	0.8	2.3	1.7	16.3	2.2	14.9	5.5	160.2
1913	142.6	0.8	2.4	1.8	20.5	2.4	18.4	6.3	195.2
1914	169.9	0.9	2.3	1.9	23.5	2.6	20.8	7.0	228.9
1915	146.7	0.8	2.4	1.9	22.7	2.8	19.8	7.1	204.2
1916	221.6	0.9	2.7	2.4	26.5	3.3	22.7	7.8	287.9
1917	195.8	1.0	3.2	3.0	29.7	4.0	25.0	9.0	270.7
1918	297.7	1.1	3.9	3.5	37.4	4.7	31.3	9.5	389.1
1919	447.8	1.2	4.6	4.5	46.1	6.4	38.3	12.1	561.0

Appendix Table 8 (Concluded)

Net Entrepreneurial Income by Industry, Kansas, 1900-1939
(millions of dollars)

Year	Agri- culture	Mining	Manufac- turing	Con- struction	Trade	Finance	Service	Miscel- laneous	Total entre- preneurial income
1920	$248.9	$ 1.4	$4.3	$3.9	$46.9	$6.4	$41.3	$14.4	$367.5
1921	198.9	1.2	3.5	3.4	39.7	5.4	35.9	14.7	302.7
1922	116.3	1.1	2.6	4.6	35.1	6.0	31.4	13.6	210.7
1923	90.7	1.0	2.2	3.9	28.0	6.3	30.1	12.7	174.9
1924	204.9	1.0	2.0	4.5	33.6	6.3	34.9	13.6	300.8
1925	211.2	1.1	1.8	6.1	33.5	6.8	36.7	14.2	311.4
1926	229.5	1.1	1.8	4.1	35.9	6.9	39.5	15.3	334.1
1927	179.4	1.1	1.8	3.8	32.2	6.5	34.6	14.9	274.3
1928	235.8	1.1	1.9	3.2	34.7	6.4	37.0	15.6	335.7
1929	258.9	1.1	1.9	3.3	37.4	6.0	39.5	15.8	363.9
1930	164.0	1.0	1.8	2.7	32.2	5.1	37.2	15.1	259.1
1931	101.3	0.9	1.6	2.0	27.5	4.2	33.4	13.3	184.2
1932	57.7	0.7	1.2	2.0	20.9	3.3	26.3	10.4	122.5
1933	71.5	0.7	1.1	1.8	17.8	2.9	25.0	9.3	130.1
1934	128.7	0.7	1.2	1.9	20.0	3.1	28.8	9.4	193.8
1935	155.5	0.7	1.3	2.6	20.4	3.4	32.8	9.8	226.5
1936	158.8	0.8	1.4	2.6	18.7	3.6	33.3	10.9	230.1
1937	161.6	0.8	1.5	2.5	20.8	3.7	38.0	11.2	240.1
1938	101.5	0.8	1.5	3.2	20.1	4.1	31.3	11.0	174.8
1939	110.5	0.7	1.5	3.6	20.8	4.0	30.8	11.0	182.9

Appendix Table 9

Net Income of Kansas Farm Operators, 1900-1939
(millions of dollars)

			Income in Kind					
Year	Crops	Livestock	Value of products consumed by farm households	Gross rental value of farm homes	Government payments	Gross income of farm operators	Total production expenses	Net income of farm operators
1900	$ 59.6	$126.1	$ ---	$ 7.1	$ ---	$192.8	$104.9	$ 87.9
1901	66.4	144.0	---	7.7	---	218.1	103.1	115.0
1902	51.1	151.2	---	8.2	---	210.5	110.7	99.8
1903	77.5	137.8	---	8.8	---	224.1	110.9	113.2
1904	77.7	141.3	---	9.4	---	228.4	109.6	118.8
1905	78.9	142.6	---	9.9	---	231.4	109.1	122.3
1906	72.4	147.1	---	10.5	---	230.0	110.5	119.5
1907	88.4	157.5	---	11.1	---	257.0	118.8	138.2
1908	106.2	160.5	---	11.6	---	278.3	136.0	142.3
1909	105.1	176.6	---	12.2	---	293.9	133.0	160.9
1910	95.3	178.5	---	12.0	---	285.8	147.2	138.6
1911	82.3	170.3	---	12.4	---	265.0	138.0	127.0
1912	92.1	174.9	---	12.7	---	279.7	163.2	116.5
1913	96.6	186.1	---	13.2	---	295.9	153.3	142.6
1914	171.8	180.6	---	13.5	---	365.9	196.0	169.9
1915	136.1	200.0	---	13.7	---	349.8	203.1	146.7
1916	191.4	237.6	---	14.9	---	443.9	222.3	221.6
1917	132.8	308.8	---	16.8	---	458.4	262.6	195.8
1918	255.5	370.9	---	19.2	---	645.6	347.9	297.7
1919	290.4	485.0	---	22.0	---	797.4	349.6	447.8

Appendix Table 9 (Concluded)

Net Income of Kansas Farm Operators, 1900-1939
(millions of dollars)

			Income in Kind					
Year	Crops	Livestock	Value of products consumed by farm households	Gross rental value of farm homes	Government payments	Gross income of farm operators	Total production expenses	Net income of farm operators
1920	$295.4	$326.2	$ ---	$27.6	$ ---	$649.2	$400.3	$248.9
1921	241.8	224.5	---	23.5	---	489.8	290.9	198.9
1922	137.5	220.9	---	22.7	---	381.1	264.8	116.3
1923	110.0	236.1	---	24.2	---	370.3	279.6	90.7
1924	216.1	220.4	37.9	24.2	---	498.6	293.7	204.9
1925	188.8	276.4	42.8	24.5	---	532.5	321.3	211.2
1926	197.4	276.4	43.2	24.7	---	541.7	312.2	229.5
1927	179.1	270.8	41.1	24.4	---	515.4	336.0	179.4
1928	223.5	287.3	40.8	24.6	---	576.2	340.4	235.8
1929	217.4	306.3	42.3	25.0	---	591.0	332.1	258.9
1930	134.7	255.1	35.9	24.8	---	450.5	286.5	164.0
1931	90.4	169.7	28.2	22.8	---	311.1	209.8	101.3
1932	57.0	122.3	21.0	20.0	---	220.3	162.6	57.7
1933	63.2	119.2	20.7	18.1	7.4	228.6	157.1	71.5
1934	69.7	148.3	19.8	19.3	38.4	295.5	166.8	128.7
1935	62.3	178.7	28.6	19.7	40.9	330.2	174.7	155.5
1936	102.7	169.8	26.8	18.8	34.7	352.8	194.0	158.8
1937	134.7	172.1	27.8	18.4	18.5	371.5	209.9	161.6
1938	90.4	140.0	23.3	17.1	17.4	288.2	186.7	101.5
1939	83.7	163.0	21.4	16.2	29.6	313.9	203.4	110.5

Appendix Table 10

Value of Crops Sold and Consumed by Farm Households, Kansas, 1900-1923
(millions of dollars)

Year	Wheat	Corn	Oats	Barley	Hay	Total sales major crops	Total sales and household consumption all crops
1900	$ 37.8	$11.1	$1.3	$0.3	$ 2.4	$ 52.9	$ 59.6
1901	46.5	8.4	1.4	0.2	2.5	59.0	66.4
1902	22.9	17.8	1.6	0.2	2.9	45.4	51.1
1903	48.1	15.3	1.5	0.3	3.6	68.8	77.5
1904	50.0	14.1	1.2	0.3	3.4	69.0	77.7
1905	48.9	15.9	1.4	0.2	3.7	70.1	78.9
1906	43.1	15.4	1.4	0.6	3.8	64.3	72.4
1907	54.7	16.7	1.1	0.5	5.5	78.5	88.4
1908	65.6	21.8	1.2	0.5	5.2	94.3	106.2
1909	65.5	20.4	1.6	0.5	5.3	93.3	105.1
1910	52.4	23.2	3.0	0.3	5.7	84.6	95.3
1911	43.2	22.1	2.6	0.3	4.9	73.1	82.3
1912	54.8	18.7	2.1	0.2	6.0	81.8	92.1
1913	62.5	14.7	1.7	0.1	6.8	85.8	96.6
1914	137.1	7.9	3.1	0.4	4.1	152.6	171.8
1915	90.5	20.9	2.5	1.0	6.0	120.9	136.1
1916	129.4	33.7	2.1	0.5	4.3	170.0	191.4
1917	85.2	19.3	6.7	0.4	6.3	117.9	132.8
1918	169.5	44.1	8.1	0.4	4.8	226.9	255.5
1919	231.0	11.8	3.3	2.4	9.4	257.9	290.4
1920	224.2	18.9	4.1	2.3	12.8	262.3	295.4
1921	187.8	18.8	2.2	1.8	4.1	214.7	241.8
1922	102.2	13.0	1.1	1.0	4.8	122.1	137.5
1923	71.5	18.2	1.4	1.7	4.9	97.7	110.0

Appendix Table 11

Value of Crops Sold and Consumed by Farm Households, Kansas, 1924-1939
(millions of dollars)

Year	Wheat	Corn	Oats	Barley	Hay	Total sales major crops	Total sales all crops	Consumed by farm house-holds	Total all crops sold and consumed by farm households
1924	$143.7	$45.0	$2.8	$2.0	$4.9	$198.4	$216.1	$7.1	$223.2
1925	116.2	45.1	3.0	0.9	4.5	169.7	188.8	8.0	196.8
1926	154.5	19.2	2.0	0.3	5.3	181.3	197.4	7.3	204.7
1927	130.2	23.6	1.8	1.1	6.8	162.5	179.1	8.0	187.0
1928	149.8	52.8	1.6	3.1	3.8	211.1	223.5	6.8	230.3
1929	146.7	47.6	1.1	1.8	4.2	201.4	217.4	7.6	225.0
1930	93.2	21.2	1.4	1.5	3.4	120.7	134.7	6.9	141.6
1931	67.7	9.4	0.9	0.4	1.8	80.2	90.4	6.1	96.5
1932	40.0	6.7	0.6	0.3	2.3	49.9	57.0	5.2	62.2
1933	41.6	9.9	1.0	0.1	1.6	54.2	63.2	5.3	68.5
1934	51.8	6.1	0.7	0.1	3.3	62.0	69.7	3.2	72.9
1935	48.6	1.3	1.4	0.2	3.5	55.0	62.3	5.4	67.7
1936	89.4	1.4	1.3	0.2	2.9	95.2	102.7	4.2	106.9
1937	120.2	1.3	1.8	0.3	2.3	125.9	134.7	5.3	140.0
1938	76.5	2.4	0.9	0.4	1.3	81.5	90.4	3.9	94.3
1939	66.1	5.5	0.8	0.6	1.1	74.1	83.7	4.0	87.8

Appendix Table 12

Value of Livestock and Livestock Products Sold and Consumed by Farm Households, Kansas, 1900-1923 (millions of dollars)

Year	Cattle and calves	Hogs	Dairy products	Eggs	Chickens	Other live-stock	Total major livestock and products	Total all livestock and products
1900	$ 63.9	$30.3	$17.0	$ 5.6	$ 4.5	$1.3	$122.6	$126.1
1901	71.7	33.5	13.0	8.6	6.7	1.5	140.0	144.0
1902	84.8	28.3	19.1	7.4	5.6	1.8	147.0	151.2
1903	68.3	26.2	20.5	9.6	7.2	2.1	133.9	137.8
1904	69.9	27.3	20.2	10.0	7.5	2.4	137.3	141.3
1905	67.8	28.4	20.4	11.1	8.1	2.8	138.6	142.6
1906	66.5	35.1	19.4	10.9	7.8	3.3	143.0	147.1
1907	67.1	39.9	20.3	12.6	8.9	4.3	153.1	157.5
1908	64.6	42.7	21.2	13.5	9.4	4.7	156.1	160.6
1909	72.0	43.2	23.5	16.5	11.0	5.5	171.7	176.6
1910	69.2	41.1	25.1	18.9	12.9	6.3	173.5	178.5
1911	64.8	42.7	24.3	17.1	10.1	6.5	165.5	170.3
1912	72.0	34.9	26.8	18.3	11.2	6.8	170.0	174.9
1913	81.7	35.7	27.4	18.0	11.1	7.0	180.9	186.1
1914	78.6	32.5	26.4	19.0	12.2	6.8	175.5	180.6
1915	94.4	34.6	26.9	19.3	11.3	7.9	194.4	200.0
1916	110.2	44.5	33.8	21.4	12.6	8.4	230.9	237.6
1917	140.9	59.4	46.2	27.9	17.3	8.4	300.1	308.8
1918	164.4	74.2	59.6	33.0	21.6	7.7	360.5	370.9
1919	249.3	77.1	72.5	40.3	23.6	8.6	471.4	485.0
1920	122.6	50.3	72.2	40.6	23.8	7.6	317.1	326.2
1921	79.3	34.5	49.2	30.4	18.6	6.2	218.2	224.5
1922	80.7	45.9	36.5	29.1	17.4	5.1	214.7	220.9
1923	82.0	47.0	45.2	32.0	18.9	4.4	229.5	236.1

Appendix Table 13

Value of Livestock and Livestock Products Sold and Consumed by Farm Households, Kansas, 1924-1939 (millions of dollars)

Year	Cattle and calves	Hogs	Dairy products	Eggs	Chickens	Other livestock	Total sales major livestock and products	Total sales all livestock and products	Consumed by farm households	Total livestock and livestock products sold and consumed by farm households
1924	$ 94.6	$43.5	$29.9	$29.2	$13.4	$4.1	$214.7	$220.4	$30.8	$251.2
1925	129.6	55.4	32.6	32.8	14.5	4.1	269.0	276.4	34.8	311.2
1926	121.8	58.7	34.3	33.5	16.1	4.0	268.4	276.4	35.8	312.2
1927	132.1	46.2	37.8	28.3	15.0	3.6	263.0	270.8	33.2	304.0
1928	133.7	51.1	40.3	33.8	16.1	3.7	278.7	287.3	34.0	321.3
1929	136.3	63.1	42.5	34.9	16.8	3.5	297.1	306.3	34.7	341.0
1930	113.5	58.5	35.1	25.7	14.1	1.7	248.6	255.1	29.0	284.1
1931	73.0	33.4	27.9	18.4	11.4	1.3	165.4	169.7	22.1	191.8
1932	54.0	22.6	21.5	11.9	7.5	1.0	118.5	122.3	15.7	138.0
1933	45.7	27.6	22.2	11.3	6.0	1.7	114.5	119.2	15.4	134.6
1934	71.8	21.9	25.4	13.7	7.2	2.4	142.4	148.3	16.6	164.9
1935	87.0	23.7	30.0	19.5	7.6	3.3	171.1	178.7	23.2	201.9
1936	72.6	32.1	31.8	15.0	7.6	4.2	163.3	169.8	22.7	192.5
1937	85.6	21.4	31.3	15.3	6.1	5.6	165.3	172.1	22.5	194.6
1938	66.1	16.9	27.9	14.2	4.6	3.6	133.3	140.0	19.3	159.3
1939	87.8	21.0	26.1	12.3	5.1	2.4	154.7	163.0	17.4	180.4

Appendix Table 14

Total Production Expenses in Kansas Agriculture, 1900-1939
(millions of dollars)

Year	Depreciation	Hired labor	Taxes	Farm mortgage interest	Feed purchased	Livestock purchased	Operation of motor vehicles	Fertilizer and lime	Miscellaneous	Total production expenses
1900	$ 9.7	$12.3	$11.0	$ 5.0	$12.6	$33.8	$ ---	$---	$20.5	$104.9
1901	11.4	13.5	11.0	5.4	13.2	27.1	---	---	21.5	103.1
1902	12.2	14.7	11.0	5.8	14.6	33.7	---	---	18.7	110.7
1903	13.0	15.9	11.0	6.1	13.9	27.4	---	---	23.6	110.9
1904	13.7	17.2	11.0	6.4	14.6	22.0	---	---	24.7	109.6
1905	14.5	18.4	11.0	6.7	14.1	18.7	---	---	25.7	109.1
1906	15.2	19.6	11.0	7.0	14.3	18.4	---	---	26.8	110.5
1907	16.0	20.9	11.0	7.2	15.5	18.0	---	---	30.2	118.8
1908	16.8	22.1	11.0	7.5	15.5	30.1	---	---	33.0	136.0
1909	18.2	23.3	11.0	7.6	17.8	20.9	---	---	34.2	133.0
1910	21.1	23.9	11.0	9.3	25.0	25.8	0.1	---	31.0	147.2
1911	23.1	24.1	11.0	9.1	20.3	18.1	0.2	---	32.1	138.0
1912	23.8	26.6	10.0	9.0	29.7	30.2	0.3	---	33.6	163.2
1913	23.8	27.5	10.7	9.9	23.0	23.6	0.4	---	34.4	153.3
1914	24.0	30.4	11.2	10.1	23.1	56.2	0.4	---	40.6	196.0
1915	26.1	33.0	12.4	10.5	22.7	53.9	1.8	---	42.7	203.1
1916	28.3	36.8	13.2	11.5	28.2	50.5	2.9	---	50.9	222.3
1917	32.7	47.6	14.8	13.0	33.0	57.1	3.8	---	60.6	262.6
1918	40.2	60.3	17.5	15.6	58.7	70.8	5.2	---	79.6	347.9
1919	50.4	75.4	21.5	17.0	57.5	30.6	6.6	---	90.6	349.6

Appendix Table 14 (Concluded)

Total Production Expenses in Kansas Agriculture, 1900-1939
(millions of dollars)

Year	Depreciation	Hired labor	Taxes	Farm mortgage interest	Feed purchased	Livestock purchased	Operation of motor vehicles	Fertilizer and lime	Miscellaneous	Total production expenses
1920	$61.2	$83.0	$27.0	$20.0	$62.3	$53.1	$14.2	$---	$79.5	$400.3
1921	48.9	47.9	30.1	25.7	33.3	35.9	11.3	---	57.8	290.9
1922	44.2	41.1	26.6	29.4	29.9	41.1	11.3	---	41.2	264.8
1923	42.7	41.4	28.7	32.2	33.9	45.1	11.9	---	43.7	279.6
1924	42.2	45.3	27.9	32.6	29.1	40.0	13.2	---	63.4	293.7
1925	41.5	43.7	30.6	30.8	38.1	58.8	15.8	---	62.1	321.3
1926	43.3	43.4	33.5	28.5	34.3	49.3	18.9	---	61.0	312.2
1927	44.3	41.3	34.5	27.0	34.3	73.8	18.5	0.3	62.0	336.0
1928	46.0	39.4	34.6	26.4	37.4	73.1	21.1	0.3	62.1	340.4
1929	49.6	36.4	35.4	25.1	35.1	64.6	24.2	0.3	61.4	332.1
1930	48.5	31.5	32.9	23.1	29.6	51.7	23.6	0.5	45.1	286.5
1931	37.1	22.3	30.4	23.7	16.4	27.4	18.9	0.3	33.3	209.8
1932	28.3	15.5	23.5	24.0	12.5	20.1	15.9	0.2	22.6	162.6
1933	27.5	13.3	20.6	23.4	14.8	17.6	15.9	0.1	23.9	157.1
1934	30.2	13.6	21.4	20.4	18.5	18.8	18.0	---	25.9	166.8
1935	31.4	14.8	22.0	18.9	17.6	21.9	19.9	0.2	28.0	174.7
1936	37.7	16.0	22.7	16.8	24.6	17.2	21.2	0.2	37.6	194.0
1937	43.4	16.6	23.2	15.3	25.6	21.9	24.3	0.4	39.2	209.9
1938	36.4	15.2	22.6	14.0	17.3	27.0	23.4	0.5	30.3	186.7
1939	35.7	15.3	22.7	13.2	22.1	39.7	23.6	0.6	30.5	203.4

Appendix Table 15

FORM BE-2
(10-2-46)

Income Payments to Individuals in Kansas
By Type of Payment and Industrial Source
(millions of dollars)

Department of Commerce
Office of Business
Economics

Item		1929	1933	1939	1940	1941	1942	1943	1944	1945
Gross Wages and Salaries		535.2	298.8	395.9	407.6	499.5	771.6	1,043.3	1,116.8	1,020.2
Agriculture		34.6	11.8	15.8	16.1	24.0	31.9	38.1	39.1	39.3
Mining		32.3	15.4	20.2	20.1	22.7	24.0	30.2	33.5	33.3
Manufacturing		84.2	45.0	58.4	66.0	96.6	201.0	325.8	335.6	290.9
Construction		19.6	4.8	11.9	10.0	22.3	102.1	89.5	29.2	30.4
Transportation		81.4	41.3	60.8	60.1	71.9	93.9	112.6	138.7	136.9
Power and Gas		4.3	3.1	6.5	9.0	9.3	9.6	9.7	10.0	11.0
Communication		5.4	3.1	5.7	5.7	6.3	7.1	8.4	8.5	10.3
Trade		100.8	54.2	64.2	66.9	78.6	87.6	100.8	112.3	127.8
Finance		20.6	12.7	14.8	15.2	17.1	18.3	19.2	19.5	21.9
Government		77.7	64.1	79.0	77.5	82.8	114.1	210.8	237.4	211.9
Service		44.7	24.2	32.5	34.1	36.8	46.1	53.8	58.1	61.6
Miscellaneous		29.6	19.1	26.1	26.9	31.1	35.9	44.4	44.9	44.9
Ded. for Social Ins.		.4	.4	4.0	4.3	5.4	8.9	12.4	14.3	13.3
Net Wages and Salaries		534.8	298.4	391.9	403.3	494.1	762.7	1,030.9	1,102.5	1,006.9
Net Income of Propr.		306.8	86.6	165.0	195.7	307.7	549.1	564.7	599.3	591.2
Agriculture		203.1	35.2	82.6	110.7	201.4	375.5	349.8	375.1	348.4
Mining	)								5.8	4.4
Manufacturing	)								15.3	15.6
Construction	)								17.9	21.6
Transportation	)	103.7	51.4	82.4	85.0	106.3	173.6	214.9	4.1	4.2
Trade	)								133.4	149.2
Finance	)								5.1	6.0
Service	)								42.6	41.8
Miscellaneous	)									
Property Income		138.7	62.4	85.4	104.7	121.2	138.7	155.0	167.9	173.7
Other Income Payments		16.0	27.3	50.4	52.5	50.7	49.6	73.0	117.7	157.5
TOTAL INCOME PAYMENTS		996.3	474.7	692.7	756.2	973.7	1,500.1	1,823.6	1,987.4	1,929.3

Appendix Table 15 (Concluded)

FORM BE-2
(10-2-46)

Income Payments to Individuals in Kansas
By Type of Payment and Industrial Source
(millions of dollars)

Department of Commerce
Office of Business
Economics

Item	1946	1947	1948	1949	1950	1951	1952
Gross Wages and Salaries	976.1	1,092.8	1,236.6	1,301.7	1,391.3	1,708.8	1,922.4
Agriculture	45.9	53.2	57.5	50.6	45.7	46.7	50.0
Mining	36.2	41.1	49.2	49.5	52.5	63.8	68.4
Manufacturing	186.4	222.1	244.8	261.8	298.4	439.7	535.0
Construction	40.0	57.0	72.7	75.3	82.9	118.7	125.6
Transportation	150.5	163.6	177.5	177.2	180.7	214.6	227.8
Power and Gas	14.6	18.6	23.3	24.9	27.3	30.8	33.6
Communication	13.5	15.1	18.5	19.5	20.2	24.0	27.5
Trade	173.6	203.2	234.8	244.1	263.5	299.7	325.9
Finance	28.0	30.7	34.4	37.7	44.8	52.5	57.9
Government	171.4	160.5	185.1	214.6	220.6	250.8	290.4
Service	70.8	81.8	90.8	94.1	100.3	116.2	128.4
Miscellaneous	45.2	45.9	48.0	52.4	54.4	51.3	51.9
Ded. for Social Ins.	13.5	16.5	17.3	18.6	23.6	29.4	32.5
Net Wages and Salaries	962.6	1,076.3	1,219.3	1,283.1	1,367.7	1,679.4	1,889.9
Net Income of Propr.	690.5	963.6	799.0	616.0	758.0	719.2	1,035.6
Agriculture	405.2	687.4	497.4	335.5	426.7	344.2	667.9
Mining	5.6	8.9	13.2	9.0	12.2	15.4	12.7
Manufacturing	14.1	11.0	7.5	6.7	10.1	9.6	7.9
Construction	26.3	33.7	40.6	42.4	51.0	62.0	57.1
Transportation	6.0	7.1	7.3	7.2	7.9	9.3	10.7
Trade	181.4	159.6	171.7	152.1	182.3	202.8	196.4
Finance	7.5	8.7	9.9	9.7	11.2	13.3	15.5
Service	44.4	47.2	51.4	53.4	56.6	62.6	67.4
Miscellaneous							
Property income	203.1	231.0	250.3	253.9	287.5	303.1	322.3
Other Income Payments	143.7	128.2	112.4	119.0	155.5	145.7	152.3
TOTAL INCOME PAYMENTS	1,999.9	2,399.1	2,381.0	2,272.0	2,568.7	2,847.4	3,400.1

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APPENDIX

BASIC DATA, SOURCES, AND METHODOLOGY

Wages and Salaries (Table 2)

Agriculture

(See discussion of various production expenses, Table 14, page

Mineral Industries (Table 3)

The primary sources of data are the Census of Mines and Quarries for the years 1902, 1909, 1919, 1929, and the Census of Mineral Industries in 1939. The 1929 Census did not attempt to cover petroleum and natural gas, a fact which makes accurate estimation most difficult in a period of rapid expansion of the industry.

Bituminous coal.--Fairly accurate estimates of wages and salaries can be made in the coal industry. In addition to the periodic benchmarks provided by the census data, statistics published in connection with mine inspection furnish comprehensive information concerning the average number of men employed during each year. Records covering the entire 40-year period are found in the Annual Report of Coal Mine Inspection and Mine Rescue Departments, 1923, issued by the Kansas Court of Industrial Relations and a volume of similar title for 1940, released by the Kansas State Labor Department. With information concerning total wages and man days worked, an average daily wage can be computed for census years. Interpolations were made on the basis of Paul Douglas' estimates of changes in wages of coal miners in his Real Wages in the United States, 1890-1926. For later years, interpolation between census years was made by an index of earnings in Kansas manufacturing industries.

Miscellaneous minerals.—For miscellaneous minerals such as lead, zinc, limestone, sandstone and gypsum, an index of production of lead and zinc served as a basis of interpolation of employment between census years. These data are found in Information Circular 7383, "Summarized Statistics of Production of Lead and Zinc in the Tri-state (Missouri-Kansas-Oklahoma) Mining District, 1876-1945," published by the Bureau of Mines, United States Department of the Interior. Total wages paid in these industries were accepted without question for the census years, but the number of workers reported was abnormally low.[1] For example, using the number of workers and total wages reported by the Census in 1902 gives an average yearly earning of $571 per employed worker, more than $200 above the probable earnings judging by wages in coal mining or other industries. Therefore, an estimated average earning was used to obtain estimated employment in census years from reported total wages paid. Interpolations of average earnings were made on the basis of Douglas' estimates; between 1929 and 1939, changes in average annual earnings in these industries as shown in United States Department of Commerce, National Income and Product of the United States, 1929-1950, were used for the same purpose.

Petroleum and natural gas.—Employment and wages in production, drilling, and exploration of natural gas and petroleum are most difficult to estimate due to the rapid rate of expansion and the fact that, as previously mentioned, the 1929 Census did not cover this industry.

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[1] Paul H. Douglas, Real Wages in the United States, 1890-1926, p. 344.

To further complicate the situation, contract services and non-producing operations have not been covered by the censuses except in 1902 and 1939. Barger and Schurr provide the necessary clue to this enigma by pointing out that apparently there has been no marked difference in the level of importance of developmental work between 1902 and 1939. Well drilling and related activities have accounted for approximately one fourth of total employment in this industry throughout the entire period.[2] Proceeding upon the assumption that the reported employees for other census years were all production workers constituting only three fourths of those actually employed, the remaining one fourth being engaged in developmental activities, ratios of workers per well drilled and per producing well were computed and utilized in estimating yearly employment. Dividing the number of wells drilled by estimated employment in this activity gave a ratio of wells drilled per developmental employee; a similar procedure for producing wells gave a ratio of producing wells per worker for each census year. As would be expected, the number of workers per well drilled has gradually increased since 1902—particularly after the opening of the deep wells in central Kansas in the Mid-twenties—while the number of workers per operating well has steadily decreased.

Data on gas wells were not used in computation of these ratios, since there are gaps in the series between 1919 and 1928. Information on crude petroleum was taken from Mineral Resources of the United States for the years 1900-1931 and from Minerals Yearbook for 1932-1939.

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[2] Harold Barger and Sam H. Schurr, The Mining Industries, 1899-1939, p. 196.

By dividing these ratios into the data on wells drilled and wells producing, estimated employment in the two types of activity was derived. Total estimated employment was multiplied by computed average yearly earnings based on census data and interpolated by an index of earnings in Kansas manufacturing.

Manufacturing (Table 2)

Census data concerning wages and salaries in manufacturing are more frequent and complete than for any other industry. Because of this fact, many of the series in these estimates have been geared directly or indirectly to relative changes in manufacturing earnings. It is, therefore, essential that the procedures and assumptions upon which the manufacturing estimates are based be made as clear as possible to the reader. The methodology varies with the data available, which, in general, means that one procedure is followed for the period 1900-1919, another from 1920 to 1929, and still another between 1929 and 1939. Because data concerning salaries are not given in each census, it has been necessary to make separate estimates of salaries and wages for each year. The sum of the two comprises total earnings of employees in manufacturing for the given year.

Manufacturing censuses were conducted for the years 1899, 1904, 1909, 1914, 1919, 1921, and each succeeding odd year thereafter through 1939. Average wages were computed for each census year and converted into an index with 1914 as the base. Intercensus years were interpolated by assuming that Kansas wages moved in the same direction and at the same rate as Douglas' index of average annual earnings of employed manufacturing wage earners in the United States.[3] In other words, if the Kansas index of average earnings in manufacturing increased by 7 per cent between 1909 and 1914, while the United States index increased by 11 per cent during the same period, the proportion of the total increase occurring in any given year was nevertheless assumed to have been the same in Kansas as in the nation. Beginning with 1921, biennial censuses of manufacturing make computation of average wages much less complicated. With the exception of 1920, which was adjusted on the basis of Douglas' data, straight-line interpolations were used for the even years between 1919 and 1929. During the thirties, changes in average earnings were so rapid that straight-line interpolations were no longer satisfactory. Noncensus-year earnings were estimated by assuming the same proportionate change as occurred in the United States as per Kuznets' National Income and Its Composition, 1919-1938.

A comparable procedure was followed with regard to employment. The National Industrial Conference Board estimates of employment in manufacturing as published in Historical Statistics of the United States, 1789-1945, were used to interpolate the Kansas index up to 1929. The Kansas Commission of Labor and Industry has published indexes of employment and pay rolls in the Kansas Labor and Industrial Bulletin beginning with 1929. Subsequent interpolations of employment data for wage earners for noncensus years were made on the basis of changes in the indexes of employment in all Kansas industries from the above source.

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[3] Douglas, op. cit., p. 246.

For salaried employees, a ratio of salaried to wage-earning employees was computed for each census year for which data were available. Straight-line interpolations between census years permitted calculation of the number of salaried employees for all other years. Average salaries were likewise computed for all years possible and converted into an index adjusted by use of Douglas' data similarly to average earnings of wage earners. Between 1929 and 1939, salaries for noncensus years were assumed to move in the same direction and proportionately to changes in manufacturing salaries in Kuznets' National Income and Its Composition, 1919-1938.

Construction (Table 2)

Wages and salaries paid in the construction industry are among the most difficult to estimate due to lack of data. Censuses of the construction industry were conducted in 1929, 1935, and 1939, but each is admittedly incomplete. The unpublished estimates of the National Income Division exceed the totals reported by the censuses by 8.4 millions in 1929 and 2.3 millions in 1939. The 1929 estimate of the National Income Division was used as the benchmark from which to calculate estimates for all previous years. (Table 15). Initially, an extrapolation of this estimate was attempted by use of the value of construction authorized by building permits in the three leading cities—Kansas City, Topeka, and Wichita. The results were completely unsatisfactory.

It is believed that changes in the total value of loans and discounts of Kansas commercial banks are a very excellent indicator of general business conditions and confidence; however, it is also recognized that building activity does not necessarily parallel general business activity. If these two facets of the economy were perfectly correlated, an index of loans and discounts would be identical with an index of the value of total construction. For the United States, it is possible to make such a comparison for the years 1915-1939 from data in the Statistical Supplement to Construction and Building Materials for May, 1953, "Construction Volume and Costs, 1915-1952," compiled by the National Production Authority, Department of Commerce, and Historical Statistics of the United States, 1789-1945. These data indicate that the index of value of construction varied from 60 per cent of the index of loans and discounts in 1932 to 123 per cent in 1925. A low percentage means that construction was not keeping pace with general business conditions, while a high percentage indicates a building boom. The Kansas index of loans and discounts was adjusted accordingly and was used to extrapolate the 1929 estimate of wages and salaries in construction back to 1915. Prior to this date, there are no federal data available, so the Kansas index was used unadjusted.

Transportation (Table 4)

Steam Railways, Pullman, and Railway Express.—Data concerning operating revenues of steam railway companies in Kansas are available for most years in reports of the state regulatory commission, although the titles change frequently—Kansas Board of Railroad Commissioners, Kansas Public Utilities Commission, Kansas State Corporation Commission, and so forth. For the sven years between 1904 and 1916, both operating revenues and wages and salaries were included in the reports, permitting computation of the ratio of wages and salaries to operating revenues.

Straight-line interpolations were used for the odd years. With the disappearance of wage and salary data from the state reports, similar ratios were computed from Kuznets' National Income and Its Composition, 1919-1938, and applied to reported operating revenues for Kansas. For the years between 1931 and 1938, no information is available concerning Kansas; for these years the percentage relationships which Kansas revenues bore to total national revenues in 1931 and 1938 were interpolated along a straight line and applied to the national data to obtain the Kansas estimates.

With the exception of the year 1920, there are no data available concerning revenues earned in Kansas by sleeping car companies. It was assumed that the Pullman Company earned the same proportion of its operating revenues in Kansas as did the railroads. Total revenues for the United States are reported in editions of Statistical Abstract of the United States from 1910 to date.

Revenues of the American Railway Express Company in Kansas are given in the state reports for eleven scattered years between 1912 and 1931. Unreported years during this interval were estimated by straight-line interpolation. Between 1931 and 1939, Kansas operating revenues were estimated by assuming the same percentage of total revenue allocable to the state as the average of the years immediately preceding.

Following Kuznets' example, operating revenues from sleeping car and express company operations were added to similar revenues for steam railways and multiplied by the ratio of salaries and wages to total operating revenues reported or estimated for the railroads.

Local railways and bus lines.--The Bureau of the Census canvassed electrical industries quinquennially from 1902 through 1937. Reports on street railways and local motor bus operations were included. Intercensus years have been estimated by straight-line interpolation.

Highway freight and passenger transportation.--Specific information for Kansas concerning employment and payrolls is lacking. The 1935 Census of Business covered motor bus transportation, but the results were not broken down into categories smaller than regions. The same census reported motor trucking for hire on a state basis; however, the returns are admittedly incomplete due to both intentional and unintentional omissions. The only clue offering some hope of reliability seemed to be the ratio of wages and salaries in highway passenger and freight transportation to railway wages and salaries for the United States as estimated by the Department of Commerce in its National Income and Product of the United States, 1929-1950. By assuming that these ratios were generally applicable to Kansas it was possible to arrive at a figure for each year 1929-1939. The 1929 estimate was extrapolated to 1921 on the basis of motor fuel consumption by trucks outside cities as estimated by Harold Barger in The Transportation Industries, 1889-1946. Prior to 1921, motor transportation was insignificant. Admittedly, such a procedure is very rough, but it appears to be logically more defensible than leaving motor transportation completely out of account. On this point, it can be surmised that motor transportation was not included in the unpublished state estimates of the Department of Commerce for 1929 and 1933, since those of the present study run 24 and 33 per cent respectively above these two years (Table 15). For 1939, however, the estimates are only 2 per cent apart.

Communications and Public Utilities (Table 5)

Telephones.—Data on a state basis were available in the Census of Electrical Industries for 1902 and 1907 but were omitted after that date. Statements of operating revenue earned in Kansas were published for 1912 and for most years after 1920 in the reports of the state regulatory commission. Ratios of wages and salaries to operating revenues were computed from United States data in the quinquennial censuses and applied to the available statistics for Kansas for 1912 and 1917. Intercensus years were estimated by straight-line interpolation. For the years 1919-1938, similar ratios were calculated from data in Kuznets' study.

Telegraph.—Gross annual receipts of the Western Union Telegraph Company are included in yearly editions of Statistical Abstract of the United States. Information concerning wages and salaries paid is available for 1912 and subsequent census years, permitting periodic calculation of the ratio of wages and salaries to receipts. These ratios were straight-lined between census years. Kuznets' data were used between 1919 and 1938 for computation of ratios. Gross receipts from telegraph operations in Kansas were estimated by assuming that the company earned the same percentage of its total receipts in the state as did the railroad companies.

Electric companies.—Total wages and salaries are reported on a state basis in the Censuses of Electrical Industries for quinquennial years from 1902 to 1922. Straight-line interpolations were made between census years. Beginning with 1919, operating revenues of electric companies in Kansas were published for most years in reports of the Public Utilities Commission. Ratios of salaries to total revenues were computed from Kuznets' data and applied to the Kansas figures as reported.

Gas companies.—Operating revenues are reported for most years subsequent to 1912 in reports of the regulatory commission. Ratios of wages and salaries were again computed from Kuznets. Prior to 1912, employee compensation was extrapolated on the basis of value of gas produced in Kansas.

Trade (Table 2)

Basically, the estimates of wages and salaries in trade follow Robert F. Martin's National Income in the United States, 1799-1938. He in turn, borrows from all who have made major contributions to national income estimates. The census data, which cover 1929, 1933, 1935, and 1939, are incomplete and evidently unusable without considerable adjustment; for example, total payrolls reported for 1939 are 52.5 millions of dollars as contrasted with an estimate of 64.2 by the National Income Division in its unpublished figure for the same year (Table 15). Martin's lead has been followed because the estimates so derived for the thirties are very close to those of Slaughter and the National Income Division of the Department of Commerce—and the same methodology can be used back to 1900, a very desirable eventuality.

Using Martin's data for the United States, estimated income from the trade and service industries was subtracted from the sum of private production income and realized income from government to give a subtotal representing income from all industries excluding trade and services. The percentage which trade constituted of this subtotal was computed for each year. It was assumed that the application of this computed percentage to Kansas income data for all industries except trade and services would give a satisfactory approximation of total income received from trade in Kansas.

Martin also estimates the percentage distribution of realized income received, i.e., relative shares going for wages and salaries, entrepreneurial income, and so forth. Comparable data are available for Kansas only for the years 1929-1935 from Slaughter's Income Received in the Various States, 1929-1935. A comparison of the proportion of total income going for wages and salaries in Kansas as contrasted with the United States for these years indicates that Kansas consistently has a lower percentage in salaries and wages than does the nation (91.4 per cent of the national average). Martin's estimates for United States wages and salaries were adjusted accordingly. His estimates for entrepreneurial income were increased proportionately upon the assumption that entrepreneurial earnings in Kansas are a correspondingly higher percentage of income from trade than in the nation generally.

Finance (Table 6)

Banks.—Salaries for banks are undoubtedly the most reliable component of the estimates for the finance sector of the economy. Total payroll data are reported for state banks in the Biennial Reports of the State Bank Commissioner. Similar information for national banks is available for all years subsequent to 1917 from Annual Reports of the Comptroller of the Currency. For prior years it was necessary to multiply loans and discounts of national banks by an adjusted ratio of state bank salaries to loans and discounts in order to obtain salaries in the national banks. For the years 1918-1929, the ratio of salaries to loans and discounts in national banks was 88 per cent of that for state banks. This was the basis of the above-mentioned adjustment.

Financial institutions other than banks.—King, Kuznets, and Martin did not attempt estimates of wages and salaries paid by the miscellaneous financial institutions such as security brokers, personal loan companies, building and loan associations, installment finance companies, mortgage and farm mortgage companies, and so forth. For this reason, as well as for lack of data, no attempt has been made in the present estimates to cover this segment of the economy prior to 1929. The Department of Commerce provides coverage for such businesses in its national series starting with 1929. Presumably, they are likewise included in the state series, although this is not so certain since the present estimates range from 5 to 15 per cent above those of the National Income Division for the years 1929, 1933, and 1939. With the exception of the Building and Loan Associations, state data are not available for these institutions outside of the coverage provided by the 1935 Census of Business in "Financial Institutions Other Than Banks." This publication gives total salaries of officials and employees of all such institutions as well as separate breakdowns for some of the major types. From this data, it is possible to compute the percentage of total salaries in the United States which was paid to Kansans in the year 1935. Separate percentages were computed for security and commodity brokers and for the remaining miscellaneous institutions not falling in the preceding category. The percentages thus derived were applied to corresponding totals of salaries paid in the United States as estimated by the National Income Division in National Income and Product of the United States, 1929-1950 to provide estimates of Kansas salaries. The estimate computed in this manner is naturally higher than the figure shown for Kansas in the 1935 Census, because the Department of Commerce has made an adjustment for under-enumeration.

Insurance.—Total premiums received by companies authorized to do business in Kansas are found in annual reports of the Insurance Department. The fact that there is no breakdown of premium income into new policies and renewals means that agents' commissions can under no circumstances be computed with the desired accuracy because of the wide spread between commissions on the two types of income. In lieu of a more direct method, reports of the eleven companies currently leading in premium income in the state were checked at frequent intervals back to 1900 (or the beginning of their business in Kansas) for premium income, by type, and total commissions paid agents. These data were found in Best's Life Insurance Reports. For the first few years of the period this information is also included in the annual reports of the Insurance Department. With such statistics at hand, the average ratio of commissions to total premium income was computed, weighted according to volume of business done in the United States. These ratios varied from 16.6 per cent in 1900 to 8.4 per cent in 1938, depending primarily upon the relative volume of new policies sold. The application of these ratios to total premium income in Kansas for the respective years yielded estimates of commissions paid to life insurance agents.

A similar procedure was followed for coverages by stock fire insurance companies and mutual companies. Total premiums received each year are reported in the Seventy-Eighth Annual Report of the Commissioner of Insurance. Ratios of commissions to premiums are reported for

1900-1917 in The Insurance Yearbook, 1919-1920, Fire and Marine, published by the Spectator Company. A weighted average of fire, marine, and casualty companies was computed for 1938 based on data found in appropriate volumes of The Insurance Yearbook. The computed ratio was only slightly higher than those for 1900-1917. Apparently this relationship has remained relatively constant during the period covered. Mutual companies are an important recipient of premium income only since World War I. Due to their low commission rates they are relatively unimportant as a source of income from selling. Their salaried employees are included in total compensation as explained below.

Totaling commissions received by agents of all types of insurance provides more than half of the compensation for services in insurance but offers no indication of compensation to salaried employees. It is not feasible to use percentages based on national data, since Kansas does not have a proportionate share of home offices. Fortunately, a census of the insurance business was included in the 1935 Census of Business. Although this Census was voluntary and is not complete—particularly with regard to small offices or the self-employed—the report is assumed to represent almost complete coverage of the home, branch, departmental, and managerial offices. Since these offices contain the vast bulk of salaried employees, and since agency offices large enough to have significant numbers of salaried workers would be most likely to be covered by the Census, total salaries reported have been accepted without adjustment. Reports of commissions received were obviously incomplete; the writer's estimates as explained above were substituted. Reported salaries plus estimated commission earnings equals total estimated earnings of salaried employees, commissioned agents, and active proprietors and firm members. For 1935, commissions represented 68 per cent and salaries represented 32 per cent of total earnings. Since there were few if any home offices established in Kansas in 1900, it was assumed that salaries constituted a smaller portion of the total prior to World War I than they have subsequently. By subtracting the home office salaries from the 1935 payroll data, it was estimated that salaries comprised approximately 15 per cent of total earnings at the turn of the century. This percentage was interpolated along a straight line to 32 per cent in 1920 and this proportion assumed to hold constant for succeeding years.

Included in the earnings thus computed was an indeterminate element of income attributable to active proprietors and firm members which should properly be included as entrepreneurial income. According to the census data available, such proprietors and firm members constituted 34 per cent of those engaged in the insurance business. Assuming that proprietors earn at least the average income in the business, this would mean that they should be credited with this proportion of total earnings. Salaries and commissions of employees would constitute 66 per cent of the total. The estimate was broken down accordingly. Because of the small amount involved, no attempt was made to allow for changes in this percentage before 1920.

Real estate.—Commissions, fees, and salaries are even more problematical for real estate than for insurance, for there is not even the clue provided by total premium income. The same difficulties which were encountered in the estimate for the construction industry are present on a magnified scale. It is highly improbable that "real estate activity," defined by Roy Wenzlick and Company as "the relationship of voluntary transfers to the number of families," follows the same cycle as building activity.[4] In fact, when Riggleman's building-cycle curve is superimposed upon Wenzlick's real estate activity curve, it is readily apparent that one cannot be exchanged for the other for estimating purposes without considerable loss of accuracy.[5] However, the Wenzlick Company does not recommend use of the regional real estate activity data as a basis of estimating total activity in Kansas and has no satisfactory data at its disposal.[6] Therefore, it has been necessary to extrapolate the 1935 Census data by the same method as was used for earnings in the construction industry.

The 1935 Census of Business covered real estate, as well as insurance, and is the only definite information available on a state basis. The Census itself is incomplete in its coverage to an unknown extent. As in the case of the insurance data, it was assumed that coverage of salaries was complete and that the commissions reported constituted 37 per cent of total commissions. The adjusted 1935 Census data were used as the basis for all other estimates, which must definitely be labeled as merely "an informed guess." As in the case of insurance, these estimates include income of active proprietors and firm members as well as salaried workers and commissioned agents. Sixty-five per cent of the income was arbitrarily classified as wages, salaries, and commissions, while the remainder appears under income of proprietors in finance.

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[4] Roy Wenzlick and Company, "Basic Barometers of Real Estate Trends," Chart, copyright 1951.

[5] Chart reproduced in John R. Riggleman and Ira N. Frisbee, Business Statistics, p. 533.

[6] Letter to the writer, dated December 7, 1953.

Government (Table 7)

Post Office Department.—Total compensation to postmasters and salary costs of city delivery are published in Annual Reports of the Postmaster General for each year since 1917. The cost of clerical services is listed by states for 1939 and 1940 only. It was necessary to estimate salaries of clerical help for previous years by assuming that clerical services in Kansas bore the same percentage relationship to city delivery as in the United States, a working theory which should not be too far afield judged by the years when state data were available.

Salaries of the rural carriers are not given separate from transportation expenses. The number of rural routes in Kansas is given for each year from 1916 on, however, as well as an average salary of rural carriers in the United States. By multiplying the number of rural routes in Kansas by the average salary of carriers in the United States a fairly reliable estimate was obtained.

For years prior to 1917, estimates had to be made on the assumption of a continuation of relationships existing in the years immediately preceding the discontinuance of separate state data. Therefore, Kansas postmasters were assumed to receive 2.7 per cent of total compensation of all postmasters, while city delivery was credited with 1.1 per cent of all such compensation. Kansas rural routes held a steady 4.3 per cent of United States routes from 1915 to 1921, so this percentage was projected for the unknown years.

Military and miscellaneous civilian.--Correspondence with the Chief Archivist, National Archives and Records Service, Washington, D. C., and with the Public Relations Officers of Fort Riley and Fort Leavenworth finally forced this investigator to conclude that it is practically impossible to obtain direct information concerning civilian and military payroll data for military installations in Kansas on a historical basis. Probably the best approximation could be obtained by a personal visit to Washington where post returns and strength returns are on file for inspection. By multiplying the number of persons present in Kansas for each year by average army rates of pay, it would be possible to arrive at justifiable estimates for this sector of government employment. Presumably, only military personnel would be covered; civilian personnel would have to be estimated in some other way. There appears to be no data concerning federal employment and payrolls in Kansas prior to 1929 other than for the Post Office Department. It was therefore necessary to employ a circuitous and indirect methodology in arriving at any approximation of other federal payrolls in Kansas, yet such a considerable item could hardly be omitted.

King, in his The National Income and Its Purchasing Power, provides estimates of total payrolls of the various branches of government in the United States for the years 1909-1925. From this data it is possible to compute the percentages which federal, state, and local governments plus the Post Office Department constitute of total government payrolls. Dividing these percentages into comparable figures for Kansas gives an estimated total which includes military and miscellaneous federal payrolls; the latter can be separated out by subtraction. The average of these percentages for 1909-1914 was used for 1900-1908. King's data were used without adjustment for the years covered, and the 1925 figure projected to 1928. The primary advantage of this procedure is that it reflects the tremendous increase in government expenditures during and immediately following World War I.

For the years 1929-1935, the writer's estimates of government payrolls in Kansas (excluding military and miscellaneous federal) were approximately 80 per cent of total payrolls as estimated by Slaughter in his estimates for the state. This percentage was only 1 per cent from that computed from King's data for 1925. Therefore, 80 per cent was used as the adjusting factor for the period 1929-1939.

State public education.--The basic sources of information concerning expenditures by state governments are the census volumes on Wealth, Debt, and Taxation for the years 1902 and 1913, and Financial Statistics of States from 1915 to date. From these sources were obtained per capita expenditures, which, when multiplied by population estimates from the Kansas State Board of Agriculture, resulted in estimates of total expenditures for education (other than capital outlays). It is impossible to find any satisfactory suggestions as to the percentage which payrolls have constituted of total state educational expenditures on a historical basis. Solomon Fabricant, in his Trend of Government Activity Since 1900, makes estimates of the proportion of expenditures going for payrolls for every major type of government activity except state higher education. In an article entitled, "Extent, Costs, and Significance of Public

Employment in the United States," published in the National Municipal Review of January, 1932, W. E. Mosher and S. Polah estimate that payrolls constituted 60 per cent of state educational expenditures in Kansas in 1926. This was also the average for all states in that year. In lieu of information concerning changes over time, this percentage was used for all years, 1900-1939.

State nonschool.—The procedure followed was in general comparable to that described for school expenditures above except that Fabricant's estimates were used as benchmarks in approximating total payroll from expenditure data for 1903, 1913, 1923, and 1929. Estimated average monthly payrolls of state and local governments were published by the United States Bureau of Labor Statistics in Employment and Pay Rolls of State and Local Governments, 1929-1939. Upon checking estimates computed from this source with those obtained by applying Fabricant's percentages to total expenditures as reported in Financial Statistics of States, it was found that the latter method resulted in estimates considerably higher than the former. Presumably, the change in state expenditures necessitated by the depression caused this divergence, since the series behaved quite reasonably during the twenties. Therefore, payroll reported for the thirties are the result of converting Bureau of Labor Statistics monthly estimates into yearly data by multiplying them by twelve.

Local governments.—Local governments covered by these estimates include only cities and counties. No effort was made to include townships or other minor taxing jurisdictions. Data concerning per capita cost payments by county governments are available only from Wealth, Debt, and Taxation for 1902 and 1913 cited supra and Financial Statistics of

State and Local Governments, 1932. A straight-line interpolation was utilized between 1902 and 1913. In order to move from 1913 to 1932, the percentage relationship of county to state per capita costs was computed for the two base years and a straight-line interpolation of these percentages used to derive county per capita costs from the state data. Estimated payrolls were calculated by use of Fabricant's computations as for state government. Similarly, estimates for 1929 to 1939 were derived from the estimates of monthly average payrolls of the Bureau of Labor Statistics.

Data concerning cities of 30,000 and over are available for each year from the census publications concerning financial statistics of cities. For purposes of these estimates, per capita cost payments were recorded for such cities at 5-year intervals and a straight-line interpolation made for the intervening years. Information regarding cities of 2,500 to 30,000 is available for 1913 and 1932 from previously cited sources. These expenditures were found to be 105 per cent of those for the larger cities for these two years. By assuming that this relationship held true for all other years, it was possible to calculate yearly per capita costs for the medium-sized cities. A benchmark for the cities under 2,500 was located for the year 1932 only. In this year per capita costs were 67 per cent of those for the larger cities. This relationship was assumed to hold true for all other years and cost figures computed accordingly. Population data for the three classes of cities were taken from Volume I of the 1950 Census of Population. Straight-line interpolations were used between census years.

Expenditures thus computed for counties and all cities were totaled to provide expenditures of local governments for general departments except education. Fabricant gives estimates of the ratio of payrolls to total expenditures for the years 1903, 1913, and 1932.(7) A straight-line interpolation was used to compute similar ratios for intervening years by which total payrolls could be estimated. This procedure resulted in a figure for 1929 approximately 19 per cent above the Bureau of Labor Statistics estimate. Nevertheless, in lieu of any other guideposts between 1913 and 1929, the estimate was permitted to stand. To avoid exaggeration of the decline occurring in the early thirties, the current estimate was taken as a base for the period 1929-1939 and extended on the basis of relative changes in the Bureau of Labor Statistics estimates.

School districts.—Total salaries in the public education system are available from Biennial Reports of the Kansas State Superintendent of Public Instruction.

Service (Table 2)

From all indications, Kansas wages and salaries in service did not increase as rapidly relative to trade during the twenties as was true for the nation as a whole. Martin's estimates show a fairly stable relationship between trade and service from 1900 to 1920. Between 1920 and 1929, employee income in service industries increased rapidly in relative importance—from 52.9 per cent of trade in 1920 to 65.8 per cent in 1929. According to Slaughter, however, Kansas

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[7] Fabricant, op. cit., p. 230.

did not share in this trend, since employee income in Kansas service industries was only 50 per cent of that in trade in 1929. The unpublished estimates of the Department of Commerce are even lower for service vis-à-vis trade. Martin's figures for the United States were assumed applicable to Kansas from 1900 through 1920 without adjustment. For the twenties, a straight-line interpolation was used between the national estimate for 1920 and Slaughter's comparable figure for Kansas in 1929. Slaughter's estimates were used through 1935 and projected to 1937; 1938 was obtained by interpolation between 1937 and the unpublished estimate of the Department of Commerce for 1939. Thus, wages and salaries in service were consistently tied to those in trade. Although the relationship posited may not have been the one actually existing, it is relatively certain that these two values could not get far out of line with one another.

Miscellaneous (Table 2)

In this category also it was necessary to rely heavily upon Martin's work, National Income in the United States, 1799-1938. Wages and salaries in trade, service, and miscellaneous were subtracted from total wages and salaries. The percentage relationship of miscellaneous to this subtotal was computed for each year 1900-1939 and applied to similar data from the Kansas estimates. The results were gratifyingly close to those of the Department of Commerce.

Entrepreneurial Income (Table 8)

Net Income of Farm Operators (Table 9)

Crops.—(Tables 10 and 11) The value of crops sold or consumed by farm households was estimated on the basis of available statistics for wheat, corn, oats, barley, and hay. According to estimates of the Bureau of Agricultural Economics for 1924-1929, the value of sales of these five crops averaged 88.8 per cent of the value of all crops sold or used by farm households during this period. Dividing receipts from sale of the major crops by this percentage gave an estimate of total value of crops sold or used for home consumption. Statistics of cash receipts back to 1910 are published in several sources, among which is the publication of the Kansas State Board of Agriculture, Price Patterns Through the Years That Have Had Direct Influence upon the Economy of Kansas Agriculture. The Bureau of Agricultural Economics estimates of home consumption are found in Cash Receipts and Value of Home Consumption by States, 1924-52.

One of the difficulties associated with this estimate arose from the fact that statistics on the production and distribution of the various crops are available only by crop marketing seasons. It was necessary to convert the data into calendar years for comparability. This was accomplished by computing percentages of the yearly crop sold each month and applying these percentages to the Bureau of Agricultural Economics estimates of value of crops sold. Thus, for a given calendar year, that portion of the total sales made between January and the harvesting of the new crop in the summer or fall was applied to the previous year's crop, while sales after the regular harvest date were assumed to be from the current year's harvest. In the words of Maurice Leven from whom the idea was borrowed, "These adjustments for the calendar year are obviously very crude; nevertheless, it is believed that they add materially to the accuracy of the final estimates."[8] Information as to monthly sales of crops is included in "Kansas Crop and Livestock Statistics, 1949, Annual Summary," a report of the Kansas State Board of Agriculture.

For the years 1900-1909, estimates of quantity sold are not available. A ratio of sales to production for the major crops was computed for the period 1910-1914 and assumed to hold constant for the preceding decade. Applying this ratio to production figures from Biennial Reports of the Kansas State Board of Agriculture and multiplying by average price data enables extension of the estimates, although, as always, those prior to 1910 have more room for error than for the later years.

Livestock.—(Tables 12 and 13) Federal data on Kansas marketings and slaughter of cattle and calves are unavailable prior to 1924. Biennial Reports of the Kansas State Board of Agriculture give statistics of the value of animals slaughtered or sold for slaughter, but they are suspect because they are so much lower than the Bureau of Agriculture Economics estimates found in Meat Animals: Farm Production and Income, 1924-44, Revised Estimates by States. However, it is necessary to use the inventory figures as reported in the Biennial Reports. For the years 1924-1935, annual marketings and slaughter as per the federal estimates were computed as a percentage of the Kansas inventories as of March 1. These ranged from 39 to 71 per cent of inventory and averaged roughly 55 per cent. Several indeterminate factors enter into these fluctuations, among which are changes in number of stockers and feeders fattened and changes in inventory levels occasioned by crop or price conditions. In any event, the most practicable method seemed to be to apply the computed ratio of cattle marketed and slaughtered to the inventory figure of each year to obtain an approximation of the number of head marketed. The number of head was multiplied by the average weight of cattle marketed, 1924-1935, and by an average price received by Kansas farmers. Prices received by Kansas producers for years subsequent to 1910 are given in "Statistics of Cattle, Calves, Beef, Veal, Hides, and Skins," Department of Agriculture Statistical Bulletin No. 20. To push the estimates beyond this date, Kansas farm prices for beef cattle were compared with Chicago prices for beef steers for the years 1910-1914. Kansas farm prices were found to be 78 per cent of the Chicago price. Therefore, between 1900 and 1909, 78 per cent of the Chicago price was applied to the Kansas marketings.

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[8] Leven and King, op. cit., p. 136.

To obtain an estimate of the number of hogs marketed, a similar procedure to that for cattle and calves was employed. On the basis of four sample years it was determined that the average of prices received by Kansas farmers was 90.6 per cent of average prices paid at Chicago. Since the Chicago series is continuous to 1900, this factor was applied to the Chicago price each year to obtain approximate Kansas data. "Statistics of Hogs, Pork, and Pork Products," United States Department of Agriculture Statistical Bulletin No. 18, provides the price data for Chicago.

Prior to 1924, there are no state data on value of dairy products sold. "Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869-1945," United States Department of Agriculture, Technical Bulletin No. 703, provides yearly estimates of total milk production in the United States. The percentage that Kansas milk cows were of United States milk cows was computed and applied to the United States estimates of milk production each year, giving a Kansas production figure in millions of pounds. Kansas prices are available back to 1910. From 1900 to 1909, a United States index of the price of dairy products was used to extrapolate from the last available Kansas price. Additional sources utilized included: Yearbooks of Agriculture, 1900 through 1926, and Price Patterns Through the Years . . . by the Kansas State Board of Agriculture, previously cited.

Kansas production of chickens was computed by applying the proportion which Kansas fowls were of United States fowls in the various census years to the United States estimates of production. Intercensus years were estimated by straight-line interpolation. These figures were then converted into pounds by use of an average weight per chicken and multiplied by an average price per pound. Price data were obtained by extrapolating the Kansas 1924 price by an index of Kansas poultry and egg prices. This procedure covered the period 1910-1924. The 1910 figure so derived was extrapolated to 1900 by data in Technical Bulletin No. 703. Kansas egg production and value was derived from federal estimates in a similar manner.

Estimates of the number of horses and mules sold presented more than the usual amount of difficulty, since there are no guideposts even on a national basis. Following a clue suggested by Leven in his Income in the Various States, a "normal" ratio of colts under one year to all other horses was computed on the basis of United States census data. By dividing the number of Kansas colts by this ratio, the normally expected number of horses in the state was derived. The number of Kansas colts is available only for agricultural census years; however, this datum can be calculated indirectly by applying the Kansas ratio of colts to horses to the annual inventory figures released by the State Board of Agriculture. It was found that the number of horses and mules actually on Kansas farms was considerably less than that calculated by use of the above procedure. This difference was assumed to represent the cumulative deficit created by continued export of horses and mules from the farms. Again following Leven, the average useful life of a horse or mule was estimated to be about eleven years which means a yearly turnover of one eleventh of the number on hand.[9] Dividing the cumulative deficit by eleven provided an approximation of the number of horses or mules sold by farmers in each given year. The number sold was multiplied by the average price received by farmers to give total receipts from sales. In addition to reports of the federal Census of Agriculture and Biennial Reports of the Kansas State Board of Agriculture, "Horses,

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[9] Leven and King, op. cit., p. 155.

Mules, and Motor Vehicles," United States Department of Agriculture Statistical Bulletin No. 5, was useful for prices from 1910-1923. From 1900 to 1909, prices were adapted from "Prices of Farm Products Received by Producers," Statistical Bulletin No. 15. For later years price data are from "Farm Production Costs and Returns," Bureau of Agricultural Economics Statistical Bulletin No. 83.

Income in kind.—(Table 9) The value of products consumed by farm households has not been estimated separately by the Department of Agriculture for years prior to 1924. Rather than to attempt such a project without help from any official sources, the value of cattle, hogs, eggs, poultry, milk, etc., used for home consumption has been included with the total sold in the present estimates.

Kansas gross rental value of farm dwellings was derived from United States data on the basis of the percentage relationship between value of Kansas farm dwellings and United States farm dwellings. The estimates were extended prior to 1910 by an average of the ratios of gross rental value to total value of farm dwellings in the United States for the years 1910-1914—11.7 per cent. This percentage was applied to the value of Kansas farm dwellings obtained from census reports. (For further detail, see discussion of depreciation under Total production expenses, below.) Statistical Abstracts of the United States provide information concerning value of farm buildings in the United States on an annual basis. Gross rental value for the nation is found in Farm Income Situation, August-September, 1952.

Government payments.—(Table 9) Government payments are reported first for the year 1933, and are found in the Bureau of Agricultural

Economics publication, Cash Receipts and Value of Home Consumption by States, 1924-52.

Total production expenses.--(Table 14) Estimates of depreciation represent the sum of separate computations for farm automobiles, motor trucks, tractors, other farm equipment, farm dwellings, and service buildings. Each of these components will be briefly described below. The basic source of information concerning depreciation of vehicles and machinery is the Bureau of Agricultural Economics publication, "Purchases, Depreciation, and Value of Farm Automobiles, Motor trucks, Tractors, and Other Farm Machinery, Calendar Years 1910-39," Part II, Section 2, Income Parity for Agriculture.

Kansas depreciation estimates for automobiles have been based upon the percentage relationship of Kansas to United States vehicles. The number of kansas vehicles for census years is found in the 1950 Census of Agriculture, Volume I, Part 13. Interpolation was made for noncensus years according to changes in automobile registrations listed in Highway Statistics, Summary to 1945, published by the Public Roads Administration, Federal Works Agency. Following Bureau of Agricultural Economics procedure, only 40 per cent of the total depreciation chargeable to farm automobiles has been included as an expense of production--the balance has been charged off to family use.

Sources and procedure for motor trucks were identical with those of automobiles except that all depreciation was chargeable to farm production.

The procedure for tractors was similar to that used for trucks. Interpolation between census years was made on the basis of inventory data in Biennial Reports of the Kansas State Board of Agriculture.

For other farm equipment, value figures are available for 1900 and 1910 in the Census of Agriculture for those years. A simple straight-line interpolation was used for this early period. The values thus derived were depreciated at a rate of 18.50 per cent per year, the rate applied by the Bureau of Agricultural Economics for the years immediately following. From 1910 to 1930, census values were interpolated on the basis of changes in the value of United States farm equipment as shown in Historical Statistics of the United States, 1789-1945. Between 1930 and 1940, Kansas values changed so much more radically than did the United States that this system did not work satisfactorily. Therefore, an interpolation was made by use of an index of the value of total crops sold. The 1940 value thus derived was very close to that reported by the census enumerators. Varying rates of depreciation were used between 1910 and 1939, as estimated by the Bureau of Agricultural Economics.

The basic study of depreciation of farm buildings is Part II, Section 5 of the study, Income Parity for Agriculture, entitled, "Expenditures for and Depreciation of Permanent Improvements on Farms, 1910-1940." The value of all farm buildings was obtained from agricultural census data for the years 1900 and 1910. The Bureau of Agricultural Economics estimates that farm dwellings comprise 54.7 per cent of the value of all farm buildings. Between 1900 and 1910, a straight-line interpolation was made of the computed value of farm dwellings and a 3.6 per cent rate of depreciation applied. For the years covered by the Bureau of Agricultural Economics estimates, a proportionate amount of total depreciation for the United States was allocated to Kansas on the basis of Kansas values as a percentage of the United States values, obtainable from yearly editions of the Statistical Abstract of the United States.

Service buildings, comprising 45.3 per cent of all farm buildings, were handled in a similar manner to farm dwellings. For the years 1900-1909, a depreciation rate of 6.0 per cent was applied as used by the Bureau of Agricultural Economics in the years immediately following. The rates used by the Bureau of Agricultural Economics are assumed high enough to cover maintenance expenditures as well as depreciation proper.

The Bureau of Agricultural Economics has published estimates of United States expenditures for hired farm labor since 1910, including value of perquisites furnished, in Farm Income Situation, August-September, 1952. This makes it possible to compute, for the United States, the percentage which cash wages constituted of total wages for the census years 1909, 1919, 1924, 1929, and 1939. Cash wages as reported by Kansas farmers are also included in the census data. By dividing Kansas cash wages by the United States ratio of cash to total wages it is possible to estimate total wages. The census data for 1899 cover only total amounts expended for labor with no indication as to relative share, if any, allowed for value of perquisites furnished. The 1899 figure for Kansas was adjusted accarding to Bureau of Agricultural Economics allowances for underenumeration and a straight-line trend assumed from the 1909 estimate. For all other census years, the percentage relationship of Kansas total wages to those of the United States was computed. A straight-line interpolation was made between census years and these percentages used to secure yearly estimates for Kansas from the Bureau of Agricultural Economics national figures. Since wage rates in Kansas did not change uniformly with the nation, an attempt was made to adjust for differences in the rate of change. The relationship existing between Kansas wages and United States wages in each census year was taken as 100 and an index constructed to reflect divergences from the base year. Upon occasion, this procedure modified the estimate by as much as 15 per cent of what it otherwise might have been, e. g., 1923, when Kansas wage rates had fallen that much more than agricultural wages generally. United States wage data are from "Wages and Income of Farm Workers, 1909 to 1938," Monthly Labor Review, July, 1939, and in Historical Statistics of the United States. Kansas wage rates are available in the Kansas State Board of Agriculture publication, Price Patterns. . ., previously cited.

Estimates of taxes levied on farm personalty and realty are largely based on information contained in reports of the Kansas State Tax Commission later known as reports of the Commission of Revenue and Taxation. To personal property obviously belonging on farms was added the value of farm automobiles and motor trucks as shown by census of agriculture reports. The total value of personal property so estimated was multiplied by the mill levy against personal property for each given year. The amount of taxes levied against farm land and improvements is reported for each year. Total taxes paid have been assumed relatively constant in years prior to 1911. Justification for this assumption is provided in the Census publication, Wealth, Debt, and Taxation, 1902. According to this publication, farm land and buildings constituted 70 per cent of total value of all land and buildings in the state in 1900. In 1902, the total ad valorem taxes levied amounted to 14.8 million. Seventy per cent of this figure is 10.4 million, very close to the amount reported by the State Tax Commission for 1911.

Kansas farm mortgage interest, after 1909, is estimated from state data on total debt outstanding and average interest rates in the West North Central region. For earlier years, only national estimates of total interest payable are available. The ratio of total Kansas interest payments to United States payments was computed for the years 1910-1914 and applied to the United States figure to obtain estimates for the first decade. Total debt outstanding is found in Kansas Crop and Livestock Statistics, 1949, Annual Summary. Interest rates are found in Agricultural Statistics for 1940. Total interest payments for the United States for the earlier years have been estimated by the National Industrial Conference Board and are published in its Economic Almanac, 1951-1952.

The first census information or federal estimate of any kind for feed purchased appears in the 1910 Census of Agriculture. Thereafter, state information is available for 1919, 1924, 1929, and each subsequent quinquennial census. National estimates of feed purchased annually have been made by the Bureau of Agricultural Economics and are available in Farm Income Situation, August-September, 1952. This investigator attempted to interpolate Kansas data between census years by means of a predicting equation based on changes in number of animal units, changes in prices of the various feeds, and changes in crop production. The attempt was unsuccessful, because there is no possibility of discovering what quantities at what prices entered into the total expenditure reported for the base year, 1909. The alternative has been the rather unsatisfactory procedure of using the ratio of Kansas expenditures to those of the United States for the census years as the basis of interpolation. As previously mentioned, the figures shown for years prior to 1909 are purely arbitrary. It was assumed that the quantity of feed purchased remained approximately steady and that changes in expenditure were due to changes in price level. The index used for this adjustment was Warren and Pearson's wholesale price index of farm products (1910-1914 = 100) found in Historical Statistics of the United States, 1789-1945.

Estimates of inshipments of cattle to Kansas have been made by the Bureau of Agricultural Economics for all years since 1924 and are available in Kansas Crop and Livestock Statistics, 1949, Annual Summary. The estimates are in thousands of head and must be converted into pounds and multiplied by an average price paid for stocker and feeder cattle. Information concerning the last two items for the years 1925-1952 was furnished by a letter dated September 25, 1953, from Jack L. Schmidt, Traffic Manager of the Kansas City Stock Yards Company, Kansas City, Missouri. Thus, estimates since 1924 are relatively simple. The procedure for earlier years is much more circuitous.

In order to duplicate the Bureau of Agricultural Economics procedure, it was necessary to compute a ratio of calves born per cow, a farm slaughter rate, and a death rate, from data available after 1924, and to assume that the averages of these relationships could be projected backward without losing contact with reality. The source of data for these computations was the Bureau of Agricultural Economics publication, Meat Animals, Farm Production and Income, 1924-44.

Inventory data as of January 1 of each year are available from "Kansas Crop and Livestock Statistics 1945-1946," a Report of the Kansas State Board of Agriculture. To each such inventory figure was added an estimated number of calves born; from the sum of these was subtracted the cattle marketed, slaughtered, and dying during the year. The resulting total gave an expected inventory for the next January 1 if there had been no inshipments. The difference between the expected inventory and the actual gave estimated inshipments in thousands of head. From this point the procedure was identical with that used after 1924. Prices of stockers and feeders at Chicago were the only ones available, published in "Statistics of Cattle, Calves, Beef, Veal, Hides, and Skins," Statistical Bulletin No. 20, United States Department of Agriculture.

Estimates of operating expense per motor vehicle have been made for the United States by the Bureau of Agricultural Economics and published in "Farmer's Expenditures for Operating Automobiles, Motortrucks, and Tractors," Income Parity for Agriculture, Part II, Section 4. The number of units in Kansas was computed in the same manner as for depreciation of the vehicles as described above. In accordance with Bureau of Agricultural Economics procedure, only 40 per cent of the expenses of operating farm automobiles was included as a cost of production.

Information on fertilizer used, by type, is available from Kansas Fertilizer Trends, a report of the Kansas State Board of Agriculture published in 1952. Value figures are included for 1947-1951. Sample prices are given back to 1937. These prices were projected to earlier years on the basis of an index of fertilizer prices found in the 1949 edition of Agricultural Statistics.

Miscellaneous current operating expenses is a catch-all category including blacksmithing and hardware supplies; containers; crop insurance; dairy supplies; electricity; fire, windstorm, and hail insurance; grazing fees; horses and mules purchased; insecticides; irrigation; net rent to landlords not living on farms; seed purchased; short-term interest to institutional and non-institutional lenders; veterinary expenses and medicine; and so forth. It is regrettable that for such a sizeable item there is almost a complete dearth of information upon which to base a Kansas estimate. A logical allocating factor would seem to be the percentage which land available for crops in Kansas was of the national total, but such a procedure gives a figure some 50 per cent above the Bureau of Agricultural Economics estimates for Kansas in the years for which it has made state estimates. Lacking a more satisfactory solution, the Bureau of Agricultural Economics estimates for Kansas were converted to percentages of the national totals for the years 1929, 1939-1944. Such percentages ranged from 2.9 per cent in 1939 to 4.5 per cent in 1944, the low percentages occurring in poor years and the higher percentages characterizing good years.

A portion of the national total as found in Farm Income Situation, August-September, 1952, was allocated to Kansas on the basis of arbitrarily projected percentages within the above-mentioned range, using a low percentage for poor years and a higher one for more favorable years.

Mining (Table 8)

Entrepreneurial withdrawals were approximated by multiplying the average compensation of employees in mineral industries by the estimated number of entrepreneurs. The number of entrepreneurs is given for census years and a straight-line interpolation used for other years. This is the same procedure used by Slaughter in Income Received in the Various States, 1929-1935. It is similar to that used by Kuznets in National Income and Its Composition, 1919-1938, and Martin in National Income in the United States, 1799-1938, except that salaries were averaged in with wages to obtain average earnings of all employees, while these investigators evidently used average wages only.

Manufacturing (Table 8)

Average earnings multiplied by estimated number of entrepreneurs was utilized as in mineral industries. The investigators each take a different fork of the road at this juncture: Slaughter uses average salaries in manufacturing, Martin uses average earnings as in the present estimates, and Kuznets employs a rather complicated methodology involving adjustments of the ratio of dividends and officers' compensation to gross sales of corporations as shown in Statistics of Income.

Construction (Table 8)

Since the method used for the construction industry did not yield any indication of the number of entrepreneurs involved, it was necessary to apply a ratio of entrepreneurial withdrawals to gross income. Such a ratio was computed from Kuznets' data for the years 1919-1938. The average of these ratios for the period 1919-1924 was used for all years prior to 1919. Gross income was computed by dividing estimated wages and salaries by the ratio of such compensation to gross revenue as shown by census data.

Transportation

There was no entrepreneurial income for the divisions of the industry covered by these estimates.

Trade (Table 8)

Total income from trade, as explained in the section on wages and salaries above, was multiplied by the estimated percentage allocable to entrepreneurial income. Since Kansas estimates by Slaughter indicated that the state received a greater-than-average percentage of entrepreneurial income vis-a-vis wages and salaries in the industry, Martin's percentages were adjusted upward by 9.4 per cent. For example, Martin estimated that 23.2 per cent of realized income from trade went to entrepreneurs in 1900; the present estimates allocate 29.3 per cent to this category.

Finance (Table 8)

Entrepreneurial income consists of commissions and fees of the self-employed in insurance and real estate. For details see discussion of wages and salaries in finance.

Service (Table 8)

Professional incomes constitute the bulk of such earnings. Total net incomes of physicians and surgeons, dentists, lawyers, veterinaries, and miscellaneous professions were estimated separately for each year. The number of persons engaged in these professional services was obtained from reports of the censuses of population; inter-census years were by straight-line interpolation. Earnings are a matter of rough approximation at best, particularly prior to 1929. The following sources were helpful: a series of articles carried in the Survey of Current Business between September, 1943, and May, 1944, entitled, "Incomes in Selected Professions;" "Income of Physicians," by William Weinfeld, Survey of Current Business, July, 1951; Harold F. Clark, Life Earnings in Selected Occupations in the United States.

On the basis of the scanty evidence available, it appears that Kansas physicians averaged approximately 85 per cent of the earnings of doctors in the United States between 1929 and 1939. The computed earnings of doctors were taken as a base and other professions estimated according to their relative earnings. According to Clark, the relative life earnings in these professions based on the period 1920-1936 were as follows: medicine, 100; law, 97.5; dentistry, 86.0; osteopathy, 61.9; veterinary medicine, 52.7.(10) Miscellaneous professions were assumed to have the same earnings as osteopathy.

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[10] Harold F. Clark, Life Earnings in Selected Occupations, p. 5.

For the period 1900-1928 there were even fewer guideposts. It was noted that between 1929 and 1939 the estimated earnings of doctors in Kansas averaged exactly three times that of earnings in manufacturing. This multiplier was employed to arrive at estimated earnings of physicians for all earlier years. Other professions were based upon physicians as explained above.

A further problem is the estimation of entrepreneurial income of other than professional services. Kuznets' data permit calculation of the percentage which professional income was of total entrepreneurial income for the period 1919-1938. For 1900-1919, the average of these percentages from 1919 to 1929 was used. Dividing these percentages into professional income yielded the figures which are entered in the table.

Miscellaneous (Table 8)

Martin has a percentage breakdown of realized income from miscellaneous industries. From such data it was possible to calculate the percentage relationship of entrepreneurial income to salaries and wages. This percentage was then applied to the employee compensation figure entered under Wages and Salaries above.

Property Income (Table 1)

Property income is the most difficult of all income shares to allocate by states, because there is no connection between the location of the property owned and the residence of the owner. The most reliable indicator of the proportionate share of national property income allocable to Kansas residents would seem to be income tax return data found in Statistics of Income. This information can be computed for 1916 and all subsequent years. The estimates of national property income used for the various periods were found in the following publications: 1939—National Income and Product of the United States, 1929-1950, published by the Department of Commerce; 1919-1938, Kuznets' National Income and Its Composition, 1919-1938; 1909-1918, King's estimates as adjusted by Kuznets; 1900-1908, Martin's estimates adjusted to conform to King's on the basis of the average percentage relationship between the two during the years 1909-1916.

The percentage of Kansas property income vis-a-vis the United States as shown by income tax statistics was applied to the national estimates without adjustment for the period 1917-1939. Although statistics are available for the year 1916, the percentage appears abnormally low compared with all other years reported. Therefore, the average of 1916 and 1922-1930 was applied from 1900-1916. The data indicate that Kansas received 1.4 per cent of total property income in 1918, whereas the average of the above-mentioned years was only 0.53 per cent.

The estimates obtained in this manner run well below those of the Department of Commerce because of the difference in methods used. In the official estimates, agricultural rents received by farm landlords are included under property income, whereas they have not been separated in the present procedure but appear under income of farm operators. Also, since 1947, the Department of Commerce has included an item of imputed interest received from life insurance companies and other financial intermediaries.[11] Early investigators did not attempt this, and it appears unwise to attempt it on a historical basis.

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[11] Letter from Charles F. Schwartz, Assistant Chief, National Income Division, dated December 7, 1953.

Other Income (Table 1)

This item includes public assistance and other direct relief, military pensions, workmen's compensation, unemployment compensation, and railroad retirement. Data on military pensions are from Annual Reports of the Commissioner of Pensions, 1900-1902, Statistical Abstracts, 1903-1923, and Annual Reports of the Director, United States Veterans' Bureau or similar reports of the Administrator of Veterans' Affairs thereafter. Workmen's compensation awards are published for 1928 in the Ninth Biennial Report of the Kansas Public Service Commission; thereafter in Annual Reports of the Commission of Labor and Industry, State of Kansas. Sources of information concerning relief and public assistance include: "Public Welfare Service in Kansas: A Ten Year Report, 1924-1933," Kansas Emergency Relief Committee Bulletin No. 127; also Bulletins No. 289, No. 355, and No. 380 of the same committee. The Kansas State Board of Social Welfare has issued yearly series entitled, Report of Social Welfare in 1937, Report of Social Welfare in Kansas, No. 2, 1938, and so forth, which furnishes the available information for each specific year, 1937-1939. Data concerning unemployment compensation payments are from Handbook of Operating Statistics and Employment Statistics, 1937-1952, published by the Employment Security Division, Kansas State Employment Service. Railroad retirement and Social Security benefits are from Social Security Yearbook, 1939, issued by the Federal Security Agency, Social Security Board.

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