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The impact of industrial development on Lawrence County, Tennessee

Charles MacArthur Wilson

To the Graduate Council:

I am submitting herewith a thesis written by Charles MacArthur Wilson entitled "The impact of industrial development on Lawrence County, Tennessee." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Joe A. Martin, Major Professor

We have read this thesis and recommend its acceptance:

Charles L. Cleland, Stanton P. Parry

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

November 15, 1965

To the Graduate Council:

I am submitting herewith a thesis written by Charles MacArthur Wilson entitled "The Impact of Industrial Development on Lawrence County, Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Joe A. Martin
Major Professor

We have read this thesis and recommend its acceptance:

Stanton P. Parry
Charles L. Cleland

Accepted for the Council:

Hilton A. Smith
Dean of the Graduate School

THE IMPACT OF INDUSTRIAL DEVELOPMENT ON LAWRENCE COUNTY, TENNESSEE

A Thesis

Presented to

The Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Charles MacArthur Wilson

December 1965

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CHAPTER I

INTRODUCTION

Industrial development affects key economic variables in an economy. All variables will not be affected evenly. Some effects of industrial development will be good for the people involved. Other effects will involve changes that will be costly to the people involved. The question of industrial development is a vital one today for rural communities.

Civic leaders have dual goals in promoting industrial development. They seek to broaden the local property tax base while providing employment opportunities for a growing population. These local leaders use different means to acquire new industry. Some local leaders buy up land sites to donate to new industry. Buildings are often provided to new industry for little or no rent. These leaders believe that the whole economy will benefit in the long run. They realize that new industry will boost the economy's income stream. They know that without new investment, the income stream will never increase.

Some people doubt the importance of new investment. The naturalists say industry will ruin the peace and beauty of the rural landscape. The conservatives claim that industrialization weakens the family farm position--leading to lower morals and higher crime rates. Various kinds of studies have attempted to show the different effects of

industrialization.[1] Usually, a study is based upon one effect of industrialization. But, none of the studies examined by this author deal with an overall measurement of the effects of new industry. To do so, one would have to measure economic variables on the same scale with social variables. In this study, we were only interested in the economic variables--the growth effects brought about by new industry.

It was assumed in this study that there is a relationship between new investment and other economic variables. Investment is considered the prime factor in economic growth. Other variables are a result of new investment. Here, the author wishes to define new investment as autonomous--making new investment independent of present economic activities. This assumption does not imply that autonomous investment is more important than accelerated investment--new investment in existing economic activities. This study intends to highlight the role of investment in economic growth.

I. OBJECTIVES

The objectives of this study are: (1) to develop an analytical model by which the impact of industrial development on a rural community can be seen and measured, and (2) to test the validity of the model by

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[1] H. A. Henderson, Adjustment of Rural Resource Use and Characteristics to Economic Growth, Bulletin 364 (Knoxville: The University of Tennessee Agricultural Experiment Station, 1963); and Charles Press and C. J. Hein, Farmers and Urban Expansion, A study of a Michigan township, Economic Research Service (Washington: United States Department of Agriculture and Michigan State University, 1962).

analyzing the economic impact of industrial development on the Lawrence County economy over the 1954-63 period. It is thought that enough evidence can be gathered to substantiate the hypotheses suggested in the model used. No proofs are offered for any hypothesis, only data that tend to prove the hypotheses. When we say that per capita income has increased in Lawrence County because of new industry, we rely on the assumption made previously--that personal income is a function of new investment.

II. THEORETICAL ANALYSES

Economic base theory, multiplier theory, and investment theory formed the basis for the model used in this analysis. Such economic flows as income, employment, wage rates, and consumption are considered as the economic variables reflecting growth and expansion within an economy.

Economic base theory makes it possible to distinguish between two different types of economic activity within an economy: basic and service. Basic activities can be defined as those activities which export goods or services to points outside the local community. Service activities are those that supply goods and services to people within the community. The argument put forth in economic base theory is that "service" activities are a function of "basic" activities. Basic activities are the more important in the local economy. Economic growth is dependent on the rate of increase in basic activities. Service activities will aid economic growth but will not cause it.

R. F. Kahn first introduced the employment multiplier theory in 1931.[2] Homer Hoyt introduced the base-service ratio which shows how much service employment would be supported by a certain amount of basic employment.[3] The amount of increase in service employment associated with an increase in basic employment is referred to as the employment multiplier.

John M. Keynes used the multiplier in his analysis.[4] The multiplier he developed was an employment multiplier similar to the one used in this paper. In Keynes' concept, an increase in investment expenditure raised employment by some multiple of the original investment amount. Income actually increases by the multiple because of the respending habits of consumers, and employment is increased in the process. Given enough time, consumers will respend income coming from new investment until the full multiplier is reached.

The use of the multiplier concept is not limited to income and employment multipliers. It is used in several other ways in economic analyses. Besides the income and employment multiplier, there is the foreign trade multiplier. An increase in exports will increase income and employment by some multiple.

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[2]R. F. Kahn, "The Relation of Home Investment to Unemployment," Economics Journal, XLI, No. 162 (June, 1931), 173-198.

[3]Homer Hoyt, "The Utility of the Economic Base Method in Calculating Urban Growth," Land Economics, XXXVII, No. 1 (February, 1961), 51-58.

[4]John M. Keynes, The General Theory of Employment, Interest, and Money (New York: Harcourt, Brace, and Company), 113-119.

The multipliers discussed above will work in reverse also. A decrease in the rate of investment will decrease income or employment by some multiple of the original decrease in investment. Some studies have found the reverse multiplier to be greater than the positive multiplier.[5] But this point is open to argument. Some economists would not agree with the reversibility of most economic activities.[6]

III. THE THEORETICAL MODEL

The theoretical model within which the multiplier analysis is framed calls for the assumptions of a closed economy, constant prices, and static distribution of income. Realistically, the concept of a closed economy is particularly inappropriate when applied to an area as small as one county because of the flow of goods and services that cross county lines. There are "leakages" which must be considered if an accurate measure is to be made of the economic flows within a restricted area, especially when the area is as small as a county. Some of these "leakages" which will be mentioned later are: (1) income spent outside the area by employees, (2) substitution of local employment for jobs outside the area, (3) income used to reduce existing debts without incurring new ones, and (4) hoarding.

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[5] J. B. Stevens and L. T. Wallace, Impact of Industrial Development on Howard County, Indiana, Research Bulletin No. 784 (Lafayette, Indiana: Purdue University, 1964), p. 8.

[6] Milton Friedman, Price Theory (Chicago: Aldine Publishing Company, 1962), p. 110.

The idea in using this theoretical model is to stress the importance of the economic interrelationships within a rural economy, or any economy as far as theory is concerned. The model stresses the importance of investment in economic growth. Of all the economic variables, investment is the flow which local civic leaders wish to increase. Investment is used by the model as the independent variable. All other economic variables are the functions of investment, directly or indirectly.

IV. THE PROCEDURE

The procedure used in this study was to trace the impact of industrial development on the economic flows within a rural community. Although many flows exist within an economy, only the key economic factors used in explaining economic growth and expansion were used. The plan of analysis was to separate the impact of industrialization upon agriculture from that of the county's economy. The key factors considered for the county were: (1) employment, (2) population, (3) personal income, and (4) retail sales. The changes discussed in agriculture are numerous. The impact of industrialization on governmental organizations within the county are considered. Trends in county and city tax receipts and expenditures are given for both the sample county and Tennessee. The local government debt trends for the sample county and other rural counties are analyzed as they relate to economic growth.

An impact on employment would be expected in an analysis like this one. But the directions of this impact cannot be detected from the

surface. This relationship is suggested by both economic base and multiplier theory. These analytical models suggest that increased manufacturing employment will create an increase in service employment. These theories do not suggest that the impact of industrial development on service employment will be evenly distributed. Neither is there a logical reason to suspect an evenly distributed impact. Another point to be discussed concerning the impact on employment is off-farm employment.

V. THE STUDY AREA

Lawrence County, Tennessee, was selected as the study area. A large factory moved into Lawrence County in 1956. Initially this factory employed about 1,200 workers; by 1963 it employed 2,000 workers. Before the Murray Ohio Manufacturing Company began operations in 1956, Lawrence County would have been considered a predominantly agricultural area. Between 1950 and 1956 population declined at a steady rate, but between 1956 and 1963 population increased in Lawrence County at a slight rate. This trend coupled with other characteristics made Lawrence County a suitable study area.

The primary data used in this report were gathered by survey in 1958 and again in 1963. Each survey collected data for a five year period enabling coverage from 1953 to 1963. The secondary data were taken from several sources. Some population data were obtained from Bureau of the Census publications. Employment data, income data, and some population estimates were developed by the Bureau of Business and Economic Research,

College of Business Administration, University of Tennessee. Government receipts and expenses were obtained from publications of the Tennessee Taxpayers Association.

VI. LAWRENCE COUNTY: LOCATION AND RESOURCES

Lawrence County is in the Southwestern part of Central Tennessee. The total area of the County is about 634 square miles, or 405,760 acres. Lawrence County is bordered on the north by Maury and Lewis Counties, on the east by Giles County, on the west by Wayne County, and on the south by Lauderdale County, Alabama. Lawrenceburg, the county seat, is about 70 miles southwest of Nashville and about 20 miles north of the Alabama State line (Figure 1).

Lawrence County was established in 1817. The county seat was selected in that year. The first settlement was made on the Buffalo River in 1815. By 1817, the first watermill, the first school, and the first cotton gin had been built. The early settlers were of English descent and came from areas to the East. Some of the settlers had military grants; others had occupants' grants. About 1870, the German Catholic Homestead Association bought land and settled German immigrants on about 25,000 acres in the County.[7]

Lawrence County has a humid, continental climate but it is temperate. Severe weather and high winds seldom occur.

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[7] History of Tennessee from the Earliest Times to the Present (Nashville: Goodspeed Publishing Company, 1886), pp. 108-135.

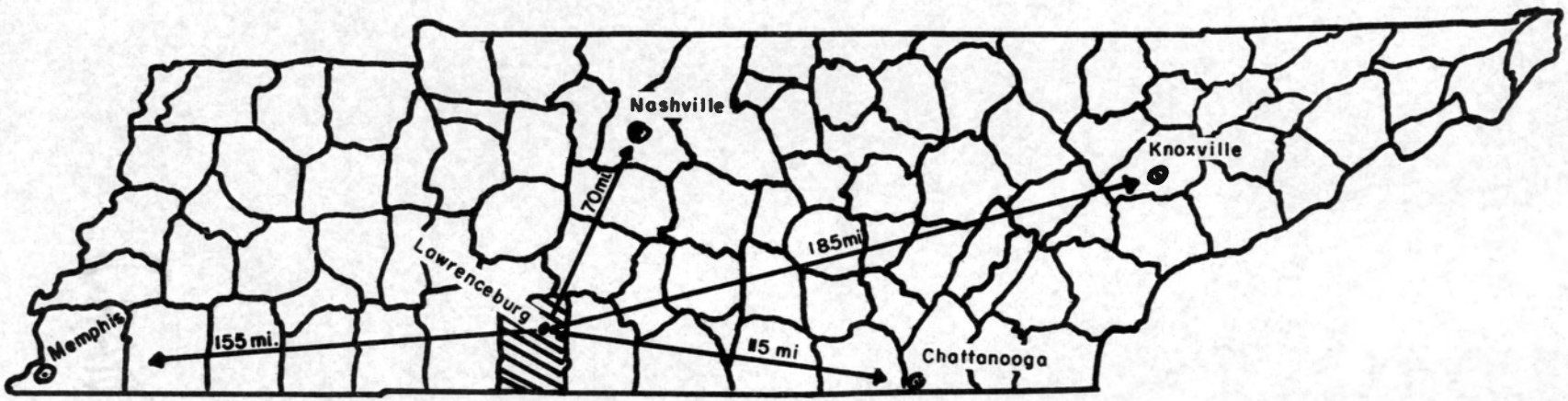


Figure 1. Location of Lawrence County in Tennessee and distance of Lawrenceburg from major cities in Tennessee.

Lawrenceburg is the principal market for farm products in Lawrence County. But Ethridge, Leoma, Loretto, St. Joseph, and Summertown are smaller trading centers. All of the centers are reached by a railroad and a federal highway.

CHAPTER II

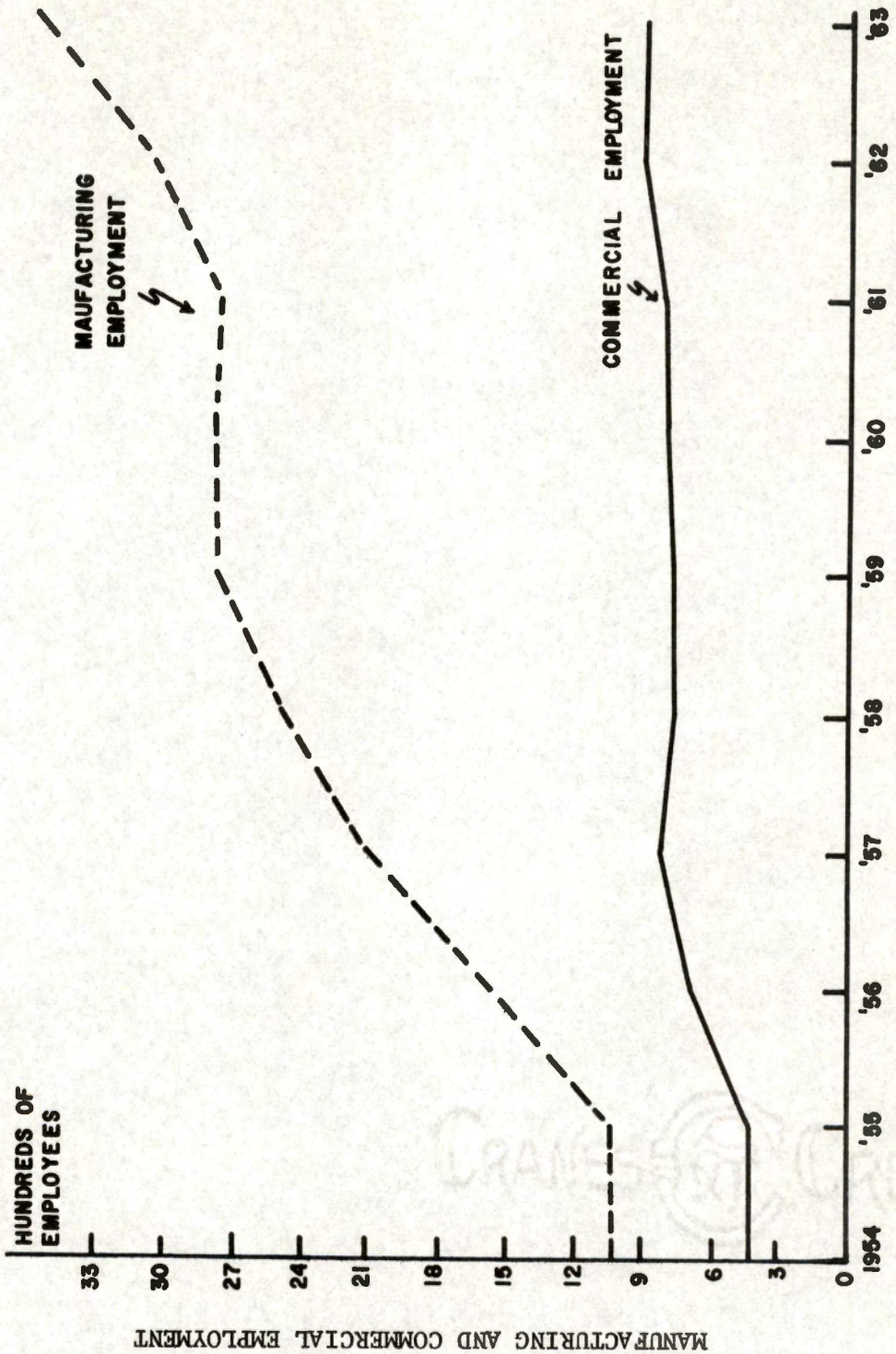
IMPACT OF INDUSTRIAL DEVELOPMENT ON LAWRENCE COUNTY'S ECONOMY

I. IMPACT ON EMPLOYMENT

Manufacturing employment followed an upward path for the years 1955 to 1959. The nationwide recession of 1956 and 1958 did not affect manufacturing employment in the County adversely even though commercial employment was affected adversely in the recession of 1958. Manufacturing employment leveled off in 1959. It seems that the employment multiplier, created by the initial investment in 1956, depleted itself by 1959. Manufacturing employment began another upward movement in 1962 and continued through 1963. Thus, over the ten year period, 1954-1963, manufacturing employment was marked by a rather steep upward trend, rising from about 1,000 to approximately 3,600 (Figure 2).

The trend in commercial employment over the 1954-1963 period roughly paralleled the manufacturing employment trend with the possible exception of 1958 when commercial employment was affected by national trends in employment.

The impact exerted on the commercial sector affected the various types of firms quite differently. The per cent of change in employment within the commercial sector ranged from 514 per cent in construction to 54 per cent in services (Table I). Compared to the State, Lawrence County had a much faster growth rate in commercial employment. Lawrence



Source: Bureau of Business and Economic Research.

Figure 2. Manufacturing and commercial employment in Lawrence County, 1954-1963.

TABLE I

TOTAL EMPLOYMENT AND PER CENT CHANGE FOR LAWRENCE COUNTY AND TENNESSEE BY TYPE, 1954 AND 1963

Type Employment		1954	1963	Change 1954-1963	
				Number	Per cent
Construction					
	Lawrence Co.	34	209	175	514
	Tennessee	43,374	46,952	3,578	8
Manufacturing					
	Lawrence Co.	1,028	3,298	2,270	221
	Tennessee	265,734	339,913	74,179	28
Transportation, Communication, and Public Utilities					
	Lawrence Co.	13*	62	49	377
	Tennessee	33,235	39,490	6,237	19
Retail Trade					
	Lawrence Co.	332	490	158	48
	Tennessee	129,925	179,807	49,882	38
Finance, Insurance, and Real Estate					
	Lawrence Co.	18	43	25	139
	Tennessee	22,722	36,393	13,671	60
Services					
	Lawrence Co.	61	94	33	54
	Tennessee	38,959	61,729	22,770	58

*1956 Data.

Source: Bureau of Business and Economic Research, College of Business Administration (Knoxville: The University of Tennessee).

County had a larger per cent change in all types of commercial employment than did the State except service employment where the difference was very small.

A relatively close statistical relationship was found between manufacturing employment and commercial employment trends (Table II). The method used in measuring the association between variables was regression analysis. Yearly variations in manufacturing employment explained 94.2 per cent of the yearly variations in commercial employment. There was some variation in the degree of relationship between manufacturing employment and types of commercial employment. The degree of relationship between transportation, communication, and public utilities employment and manufacturing employment was 93 per cent. In construction employment, 89.6 per cent of the variation was associated with variations in manufacturing employment; 80.3 per cent of the variation in finance, insurance, and real estate employment was associated with variations in manufacturing employment; 76.0 per cent of the variation in service employment was associated with variations in manufacturing employment; but none of the variations in retail trade employment was associated with variations in manufacturing employment. There has been little change in retail trade employment since 1956. Retail trade employment growth was the greatest between 1954 and 1956 where the increase was 146 employees.

By the use of economic base theory and Keynesian multiplier theory, an employment "multiplier" can be determined. This multiplier measures the increase in service employment (commercial employment) created by the

TABLE II

STATISTICAL RELATIONSHIPS BETWEEN CHANGES IN MANUFACTURING EMPLOYMENT AND CHANGES IN COMMERCIAL EMPLOYMENT

Type of Commercial Employment	Per cent of variations in Commercial Employment associated with variations in Manufacturing Employment (Correlation coefficient)
Construction	89.6
Transportation, Communication, and Public Utilities	93.0
Retail Trade	51.0
Finance, Insurance, and Real Estate	80.3
Services	76.0
Total Commercial	94.2

initial increase in basic employment (manufacturing employment).

The multiplier effect is caused by the spending habits of the people. The size of the multiplier will be determined by the marginal propensity to consume by those receiving the increased income. New investment in Lawrence County in 1956 created an increase in personal incomes. As incomes increased, people demanded more goods and services. In order to supply more goods and services, business firms increased their capacity to produce by hiring more employees. As more workers and other resources are hired, the process is started over again. There exists both an accelerator effect and a multiplier effect in a complete cycle from new investment to added capacity. This is the relationship between new investment and employment. The employment multiplier stresses the interdependence that exists between employment and investment.

An employment multiplier of 1.357 was found for Lawrence County for the period 1954-1963. This means that about three manufacturing jobs created one non-manufacturing job. This estimate of an employment multiplier for Lawrence County was small compared to the majority of the multipliers obtained in other studies reviewed by the writer. But none of these estimates were done for a rural community such as Lawrence County. The estimates reviewed ranged from 1.44 for the Howard County (Indiana) Area to 2.41 for the Lincoln (Nebraska) Metropolitan Area.[1]

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[1] Various estimates of the number of service jobs created by 100 new manufacturing jobs include: (1) 124, in Los Angeles County, 1940-1947, by Hildebrand G., and A. Mace, "The Employment Multiplier in an Expanding

The average multiplier for these studies was about 2.0.

The total increase in commercial employment was estimated at 629 workers. The increase in non-covered commercial employment was estimated by determining the extent of Old Age and Survivors Insurance in Lawrence County and then extending the increase in non-covered employment on the same ratio as the increase in covered employment. This extent of coverage was estimated to be 75.5 per cent. The total increase in educational services was estimated at 44 workers which included governmental services on all levels. The employment multiplier was estimated by dividing the net change in commercial and educational employment by the net change in manufacturing employment. The ratio of 357 commercial and educational workers for each 1,000 worker increase in manufacturing employment was found (Table III).[2]

Total employment actually declined from 1950 to 1960 in Lawrence County. Agricultural employment declined faster than non-agricultural employment increased. For the 1950-1960 period total employment decreased

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Industrial Market: Los Angeles County 1940-47," Review of Economics and Statistics, August, 1950; (2) 141, in Lincoln, Nebraska, by B. Thompson, "An Investigation of the Local Employment Multiplier," Review of Economics and Statistics, February, 1959; and (3) 44, by J. B. Stevens and L. T. Wallace, Impact of Industrial Development on Howard County, Indiana, 1947-60, Research Bulletin 784 (Lafayette, Indiana: Purdue University, 1964).

[2]It should be noted that the figures in Tables I and III are not consistent. The figures in Table III include seasonal employment plus other estimated commercial employment not included in Table I. Of course, Table I does not include private household, commercial employment not covered by Old Age and Survivors Insurance, and educational services.

TABLE III

NET EMPLOYMENT CHANGES

Type of Employment (Estimated)	Net Change
Commercial Employment	
Employment covered by OASI*	468
Employment not covered by OASI*	161
Private Household**	138
Educational Services**	44
Total increase in Commercial and Educational Employment	811

*Refers to employment covered by Old Age and Survivors Insurance.

Source of items denoted by **: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. I, Part 44, Tennessee (Washington: Government Printing Office, 1963), p. 44-234; and United States Bureau of the Census, Seventeenth Census of the United States: 1950. Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), p. 42-104.

from 9,047 employed to 8,718 employed (-3.6 per cent); agricultural employment decreased from 4,233 to 1,483 (-65 per cent); manufacturing employment increased from 1,423 to 3,228 (+127 per cent); and services and trades employment increased from 2,648 to 3,238 (+22 per cent). The county employment picture changed considerably between 1950 and 1960 with agricultural employment dropping from 47 per cent to 17 per cent of the total number employed (Table IV).

The impact of industrial development upon a rural area is related to the occupational changes mentioned above. This is probably the most significant effect. This is the first step in the generating cycle developed earlier. People leave the low income occupation of farming, where the marginal product of labor is relatively low, for manufacturing and trade employment with higher marginal products. In the process, incomes are increased, the level of spending rises, and thus, more jobs are created.

With a relatively small employment multiplier, it could have been possible that a substantial portion of the increase in manufacturing employment was taken by people living in surrounding counties. Such out-of-county employment would cause a leakage flow out of the income stream of Lawrence County. An employment and income leakage would substantially reduce the impact of industrial development on Lawrence County. The benefits would be lost to the bordering counties and communities. No data were available to validate the size of this leakage, but the small employment multiplier indicated such "leakages."

TABLE IV

EMPLOYMENT BY INDUSTRY GROUP IN LAWRENCE COUNTY, 1950 AND 1960

Employment	1950	Per cent of total	1960	Per cent of total	Change 1950-1960 Number	Per cent
Total Employed	9,047	100	8,718	100	- 329	- 3.6
Agriculture	4,433	46.8	1,483	17.0	-2,950	-69.6
Manufacturing	1,423	15.7	3,228	37.0	1,805	127
Services and Trades	2,648	29.3	3,238	37.1	590	22

Source: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. I, Part 44, Tennessee (Washington: Government Printing Office, 1963), p. 44-234; and United States Bureau of the Census, Seventeenth Census of the United States: 1950, Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), p. 42-104.

Although the data do not permit the analysis in this study, it is possible to illustrate the reversibility of the employment multiplier during periods of rapidly declining manufacturing employment. The reversibility of the employment multiplier could not be illustrated by the analysis of trends for short periods in Lawrence County. During the only period manufacturing employment decreased (1960-1961), commercial employment increased. Realistically, some economists doubt the reversibility of any supply curve or the variables associated with a given supply curve.[3] These economists argue that fixed capacity is the controlling variable--not the variable which controls growth and greater output.

The impact of increased off-farm employment opportunities on the off-farm employment characteristics of Lawrence County's farmers was quite large. The number of farm operators reporting off-farm employment one hundred days or more increased from 747 in 1954 to 1047 in 1959. Lawrence County registered the largest percentage change for the State in per cent of farm operators working off-farm one hundred days or more for the 1954-1959 period. Lawrence County had a 19 per cent change as compared to 3 per cent for Tennessee (Table V).

With the exception of Wayne County, which had an 18 per cent increase, other surrounding counties ranked low in change in per cent of farm operators working off the farm one hundred days or more for the 1954-1959 period.[4]

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[3]Friedman, loc. cit.

[4]Charles L. Cleland, Selected Population and Agricultural Statistics for Tennessee Counties, Bulletin No. 359 (Knoxville: The University of Tennessee Agricultural Experiment Station, 1963), pp. 58-60.

TABLE V

OFF-FARM EMPLOYMENT CHARACTERISTICS OF FARM OPERATORS IN LAWRENCE AND SURROUNDING COUNTIES, 1954 AND 1959

County	Farm Operators Working Off-Farm One Hundred Days or More					
	1954		1959		Change 1954-1959	
	No.	Per cent of all operators	No.	Per cent of all operators	No.	Increase in per cent of all operators
Giles	750	22.3	814	31.4	64	9.1
Lawrence	747	23.7	1,047	42.9	300	19.2
Lewis	206	39.8	195	44.5	- 11	4.7
Marshall	612	31.1	665	40.1	53	9.0
Maury	824	27.4	772	34.0	- 52	6.6
Perry	192	27.4	194	32.4	2	5.0
Wayne	416	28.8	539	47.4	123	18.6
State	58,318	28.7	50,412	32.0	-7,906	3.3

Sources: United States Bureau of the Census, United States Census of Agriculture: 1959. Counties, Vol. I, Part 31, Tennessee (Washington: Government Printing Office, 1961), pp. 164 and 188; and United States Bureau of the Census, United States Census of Agriculture: 1954. Counties, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1956), pp. 74 and 98.

Lawrence County ranked sixth in the seven counties examined in per cent of farm operators working off the farm operated one hundred days in 1954, but it rose to second in 1959. Lawrence County ranked below the State average in per cent of farm operators having off-farm employment in 1954 but ranked above the State average in 1959.

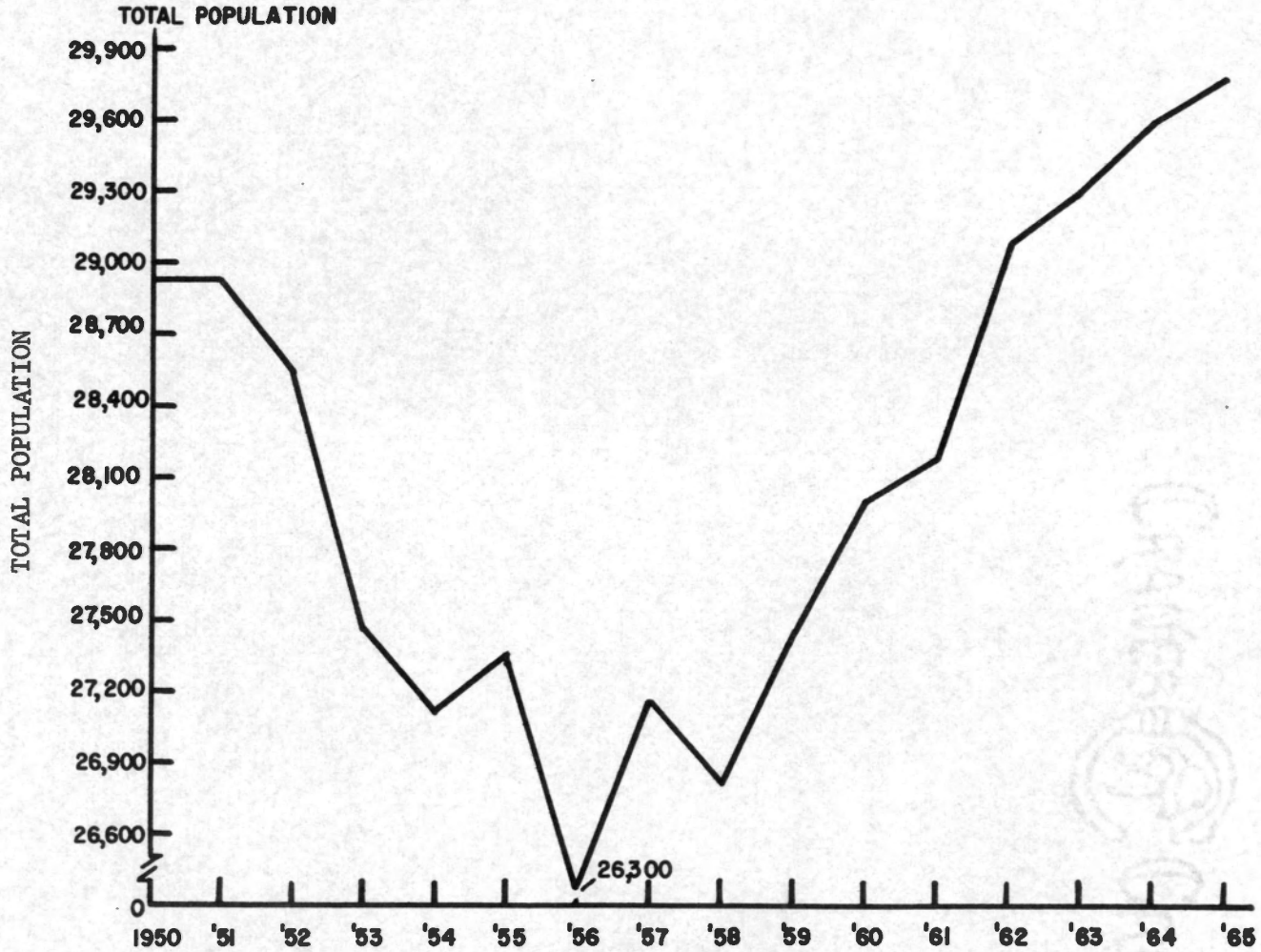
Unemployment data indicate that the rate of unemployment increased slightly in Lawrence County over the 1954-1959 period. The rapid decrease in agricultural employment may have contributed to the rise in unemployment. Agricultural employment decreased faster than manufacturing and commercial employment increased.

II. IMPACT ON POPULATION

Lawrence County population trends for the period under study graphicly reflect changes in economic conditions in the County from 1955 to 1958 (Figure 3). But since 1961, population and employment trends have been similar.

Total population in Lawrence County decreased from 28,818 in 1950 to 28,049 in 1960, a 3 per cent decrease. This decrease in total population was typical of most rural counties in Tennessee over the same time period. During the same period total population in Lawrenceburg increased from 5,442 in 1950 to 8,042 in 1960, a 48 per cent increase.

Even though Lawrence County's total population declined only 3 per cent from 1950 to 1960, the 19 and under age group declined 16 per cent. The 20-44 age group decreased 14 per cent during the same time period. The off-setting factor was the 23 per cent increase in the 45



Source: Population and Personal Income Estimates for Tennessee Counties by Corry and Price.

Figure 3. Population trend in Lawrence County, 1950-1965.

and over age group during the ten year period. In 1950 the 20-44 age group outnumbered the 40 and over age group 9,588 to 6,677, but by 1960 the two groups were approximately equal in number (8,297 to 8,210, respectively). One explanation for the opposite changes in the age groups is that the 20-44 age group is the most mobile of all age groups.[5]

Lawrence County had a net out-migration of 5,295 from 1950 to 1960, a 15 per cent out-migration of the 1950 population. The County's rate of loss through migration was almost twice the rate for the State during the decade. However, year to year estimates of the population in Lawrence County indicate that total population decreased from 1950 to 1956 and increased from 1956 to 1960. The bicycle plant, built in 1956, seems to have reversed the direction of population movement so that the County ended the decade with only a 3 per cent loss in population rather than a 10 or 12 per cent loss had the 1950-1956 trend continued.

Although total population did not change considerably from 1950 to 1960, there were noticeable internal shifts in rural farm, rural non-farm, and urban populations. Lawrence County's rural non-farm population doubled between 1950 and 1960. During the same period rural farm population decreased 42 per cent. Rural farm population was almost twice as large as rural non-farm population in 1950; but by 1960 the rural non-farm population was considerably larger than the rural farm population (Table VI).

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[5] Joe A. Martin, Abstract, "The Impact of Industrialization upon Agriculture" (unpublished Doctor's dissertation, The University of Minnesota, Minneapolis, 1955).

TABLE VI

POPULATION CHANGES IN LAWRENCE COUNTY, 1950 to 1960

Population	Total Male Population				Total Female Population				Total Population	
	1950	1960	Change 1950-1960 No.	Per cent	1950	1960	Change 1950-1960 No.	Per Cent	Total Change 1950-1960	Per cent Change 1950-1960
Rural Farm	8,299	4,859	-3,340	-41	7,985	4,598	-3,387	-42	-6,727	-41
19 & under	3,966	2,199	-1,767	-44	3,727	1,975	-1,752	-47	-3,518	-46
20-44	2,543	1,191	-1,352	-53	2,581	1,301	-1,280	-50	-2,682	-51
45 & over	1,790	1,469	- 321	-18	1,673	1,322	- 351	-21	- 672	-19
Rural Non-Farm	3,449	5,175	1,726	50	3,643	5,375	1,732	48	3,458	49
19 & under	1,465	2,225	760	51	1,475	2,174	699	47	1,459	50
20-44	1,125	1,554	429	38	1,274	1,688	414	32	843	35
45 & over	859	1,396	537	63	894	1,513	619	69	1,156	66
Urban	2,463	3,809	1,346	55	2,979	4,233	1,254	42	2,600	48
19 & under	886	1,496	610	69	1,030	1,474	440	43	1,050	55
20-44	928	1,174	246	27	1,135	1,389	254	22	500	24
45 & over	647	1,139	492	76	814	1,370	556	68	1,048	72
Total	14,211	13,843	- 368	- 3	14,607	14,206	- 401	- 3	- 769	- 3
19 & under	6,317	5,920	-1,397	-22	6,236	5,623	- 613	-10	-2,010	-16
20-44	4,598	3,010	- 679	-15	4,990	4,378	- 612	-12	-1,291	-14
45 & over	3,296	4,004	708	21	3,381	4,205	824	24	1,532	23

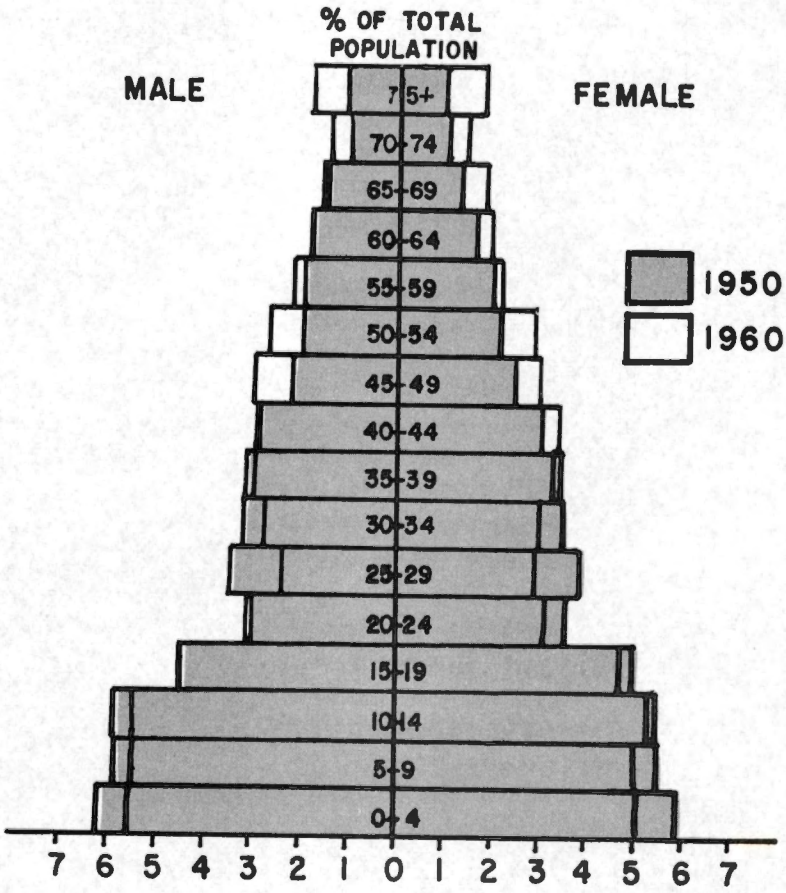
Sources: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. I, Part 44, Tennessee (Washington: Government Printing Office, 1963), pp. 44-94, 44-117, and 44-265; and United States Bureau of the Census, Seventeenth Census of the United States: 1950. Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), pp. 42-84, 42-124, and 42-136.

There were substantial decreases in all rural farm age groups. The largest percentage reduction was in the 20-44 age group with a 51 per cent decline. The 19 and under age group declined 46 per cent while the 45 and over age group declined only 20 per cent. Disproportionately large numbers of the young were drawn out, leaving the farm population weighted with older people.

An analysis of the 1950 and 1960 age-sex distribution for the County, rural farm, rural non-farm, and urban populations summarizes the population trends. The age-sex pyramid in Figure 4 shows the change in the age distribution of the total county population over the 1950-1960 period. The figure reveals that: (1) the average age of the population increased over the period; (2) the smaller per cent of the total population in the younger age groups indicated that the County's native population number will continue to increase slowly for a period of time; and (3) the County lost a large percentage of its most productive workers (ages 20-44) over the 1950-1960 period.

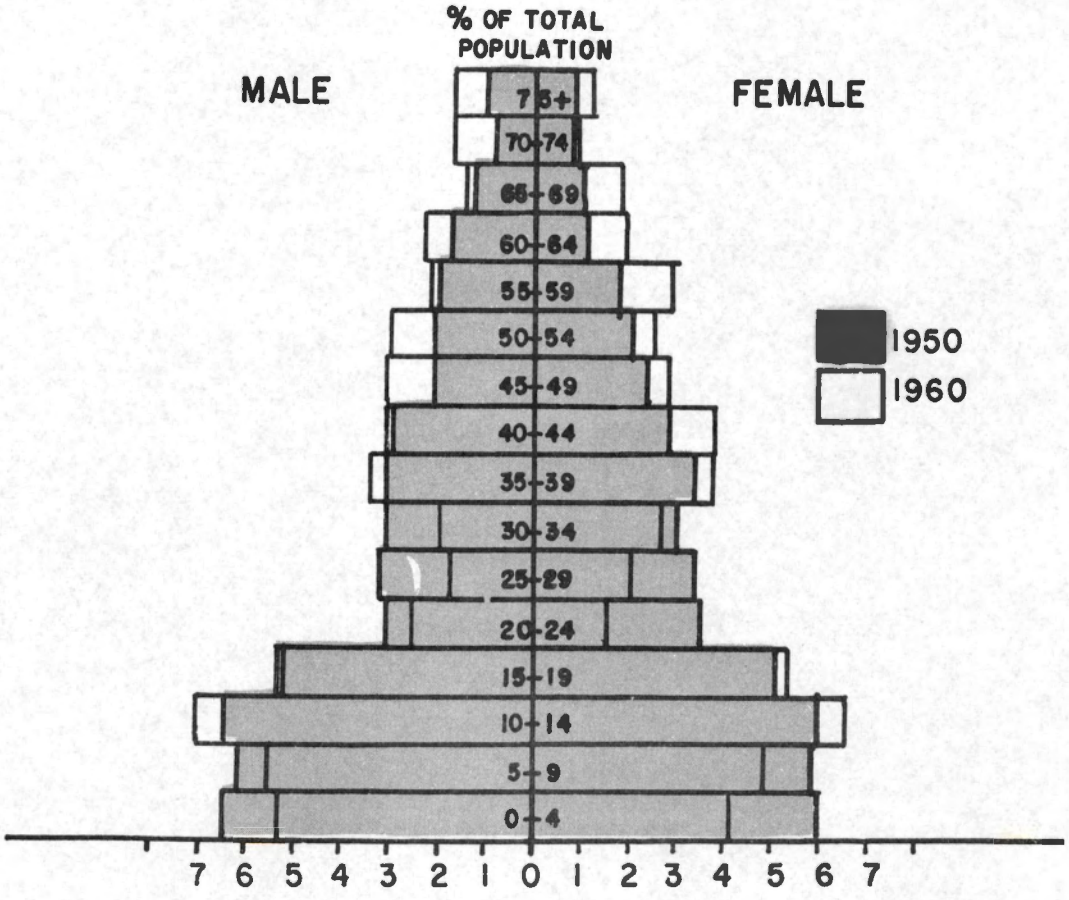
Figure 5 shows the change in the age distribution of the rural farm population from 1950 to 1960. The loss in the 20-44 age group is very noticeable. The changes in the rural farm population were so extensive as to shape the County's total population distribution over the decade. Figures 6 and 7 are age-sex pyramids of the rural non-farm and urban populations, respectively. Of particular note are the sex changes in the younger age group for the urban population.

To summarize the impact of industrial development on population, the increase in manufacturing employment was associated with an increase



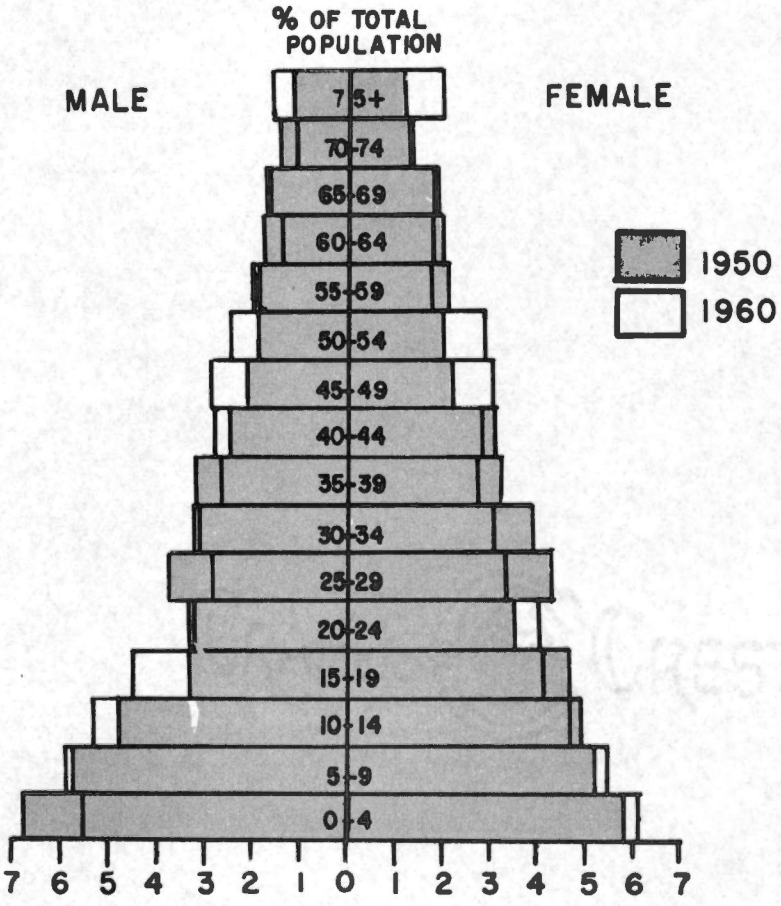
Source: United States Census of Population.

Figure 4. Age-sex distribution of the total population in Lawrence County, 1950 and 1960.



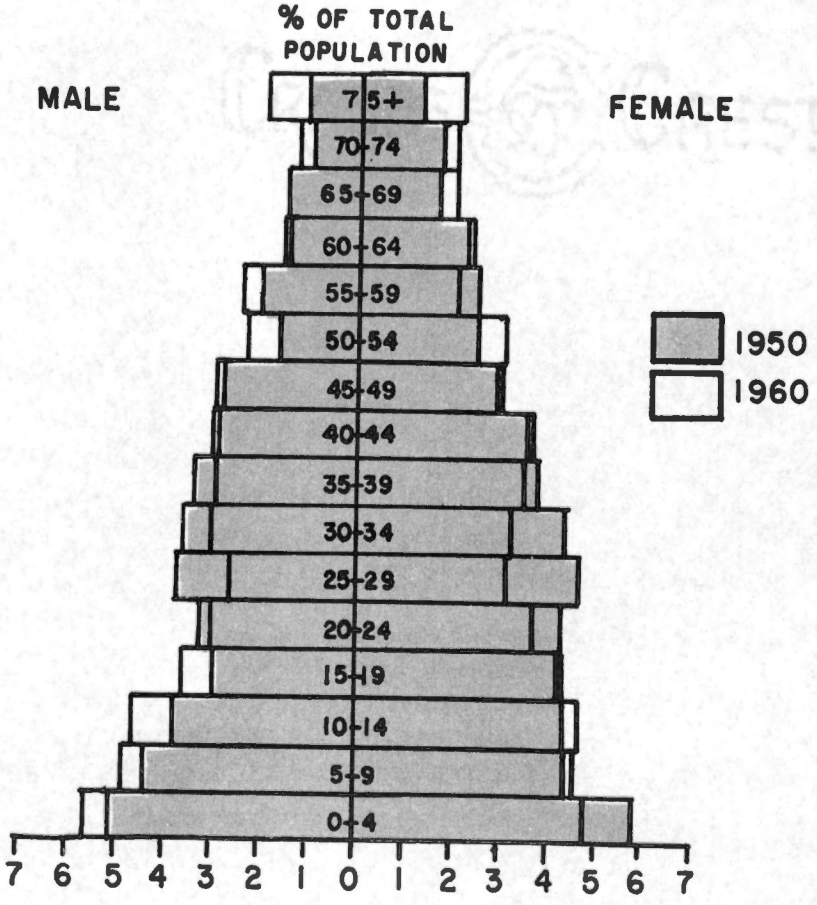
Source: United States Census of Population.

Figure 5. Age-sex distribution of the rural-farm population in Lawrence County, 1950 and 1960.



Source: United States Census of Population.

Figure 6. Age-sex distribution of the rural non-farm population in Lawrence County, 1950 and 1960.



Source: United States Census of Population.

Figure 7. Age-sex distribution of the urban population in Lawrence County, 1950 and 1960.

in total County population from 1956 to 1963. This increase was unevenly distributed both by space and by age. Total population moved in the direction of an older, more urban and more rural non-farm orientation over the 1954-1963 period. The 16 per cent decrease in the 19 and under age group and the 14 per cent decrease in the 20-44 age group were significant. This impact on total population tends to indicate that Lawrence County has not had sufficient employment opportunities for all its working population. The bicycle plant which moved into Lawrence County in 1956 was important in providing many employment opportunities, but the factory was not sufficient to insure adequate employment opportunities for the County over the 1956-1963 period. The effects of the new investment will eventually reach a new equilibrium and level off. Data seem to support the thesis that Lawrence County has reached a new equilibrium. To insure new growth and more employment opportunities, Lawrence County needs a continual flow of investment. Investment and growth theory is not an equilibrium theory. Quite the contrary, economic growth is a function of disequilibrium economic activities.

III. IMPACT ON PERSONAL INCOME

Estimates of personal income of Lawrence County residents for the 1954-1962 period were developed by the Bureau of Business and Economic Research of the University of Tennessee by apportioning state totals to counties on the basis of selected allocators.

The importance of the various sources of income shifted considerably in Lawrence County between 1955 and 1962. Wage and salary income

and other labor income increased in importance while proprietors' income, including farm and non-farm income, property income, and transfer payments, declined in relative importance.

The significance of the 1956 investment in Lawrence County is illustrated by the comparison of the 1956-1960 period with the 1950-1955 period in Lawrence County and by the comparison of each period in Lawrence County with the State. Total personal income in Lawrence County increased 33 per cent from 1950 to 1955 compared with 32 per cent for Tennessee during the same period. The increase in total personal income was 49 per cent for Lawrence County from 1956 to 1960 and 26 per cent for Tennessee. The rate of increase in total personal income was almost identical for Lawrence County and the State during the earlier period, but the rate of increase for Lawrence County almost doubled that of the State during the latter period (Table VII).

The importance of wages and salaries in Lawrence County is shown by the fact that this source accounted for 91 per cent of the net increase in total personal income from 1956 to 1960. Wages and salaries accounted for 73 per cent of the net increase in total personal income for the State during the same period. Wages and salaries rose from 43 per cent of total personal income in 1950 to 64 per cent in 1960 for Lawrence County. For Tennessee wages and salaries rose from 61 per cent of total personal income in 1950 to 68 per cent in 1960. Even though wages and salaries are still relatively more important in the State than in Lawrence County, the importance of wages and salaries increased more in Lawrence County over the period studied.

TABLE VII

TOTAL PERSONAL INCOME BY MAJOR SOURCES, PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL INCOME BY MAJOR SOURCES, AND PER CAPITA INCOME; LAWRENCE COUNTY AND STATE OF TENNESSEE, 1950, 1955, AND 1960

Type of Income	1950		1955		1960		Change 1950-1955		Change 1955-1960	
	Income	% of Total	Income	% of Total	Income	% of Total	Dollar	%	Dollar	%
Lawrence County	(Thous.)		(Thous.)		(Thous.)		(Thous.)		(Thous.)	
Total Personal Income	17,213	100	22,810	100	33,976	100	5,597	33	11,166	49
Wage and Salary	7,336	43	11,719	51	21,879	64	4,383	60	10,178	87
Other Labor Income	138	1	283	1	973	3	145	105	690	243
Proprietors' Income	6,247	36	7,362	32	6,093	18	1,115	18	-1,269	-17
Farm	3,569	21	4,960	22	3,342	10	1,391	39	-1,618	-32
Nonfarm	2,678	16	2,402	11	2,751	8	- 276	-10	349	15
Property Income	1,025	6	1,399	6	1,789	5	374	37	390	28
Transfer Payments	2,671	15	2,379	11	3,942	12	- 274	-10	1,542	65
Social Insurance (-)**	- 204	- 1	- 349	- 2	- 718	- 2	145	71	369	106
Per Capita Income	595*		834*		1,213*		239*	40	379*	45
State of Tennessee	(Millions)		(Millions)		(Millions)		(Millions)		(Millions)	
Total Personal Income	3,289	100	4,347	100	5,494	100	1,058	32	1,147	26
Wage and Salary	2,016	61	2,870	66	3,716	68	854	42	846	30
Other Labor Income	49	1	91	2	149	3	42	86	58	64
Proprietors' Income	631	19	760	17	717	13	129	20	- 43	- 6
Farm	289	9	317	7	232	4	28	10	- 85	-27
Nonfarm	342	10	443	10	485	9	101	30	42	10
Property Income	346	11	406	9	587	11	60	17	182	45
Transfer Payments	291	9	296	7	449	8	5	2	253	85
Social Insurance (-)**	- 44	- 1	- 76	- 2	- 124	- 2	32	73	48	63
Per Capita Income	995*		1,270*		1,538*		275*	28	268*	21

*Actual dollars.

**Social Security.

Source: Ormond C. Corry and Patricia Ann Price, Population and Personal Income Estimates for Tennessee Counties 1950 through 1962 (Knoxville: Bureau of Business and Economic Research, 1964), pp. 59, 60, 63, and 88.

Proprietors' income in Lawrence County declined in importance relative to total personal income. A decline in farm proprietors' income was the big reason for the drop. Proprietors' total income declined from $7,362 in 1955 to $6,682 in 1962, or a decrease of 9 per cent. Farm proprietors' income declined 27 per cent during the same period while non-farm proprietors' income increased 44 per cent from $2,402 in 1955 to $3,064 in 1962.

The distribution of personal income among Lawrence County families shifted considerably over the 1949-1959 period. In 1949, 66 per cent of the families in Lawrence County were receiving less than $2,000 average family income (Table VIII). This income group had decreased to 32 per cent of all families in 1959, representing a 48 per cent decrease over the period. During the same period, the County had increased percentages of people in all higher income classes. Tennessee had a higher median family income in 1959, but the distribution of personal income among Lawrence County families increased relative to statewide distribution over the 1949-1959 period. Lawrence County had a median family income of $1,245 compared to $1,983 for the State in 1949. By 1959, median family income had increased to $3,178 in Lawrence County and $3,949 in the State. The State average family income was higher than the County's average in 1959, but family income increased at a faster rate in Lawrence County, 155 per cent to 99 per cent for the State. Tennessee had a significantly larger percentage of the families in the $6,000-$10,000 income class than did Lawrence County in 1959.

TABLE VIII

INCOME DISTRIBUTION IN LAWRENCE COUNTY AND TENNESSEE
1949 AND 1959

Income Class	1949		1959		Change 1949-1959	
	No. of Families	% of Total	No. of Families	% of Total	Change in No. of Families	% Change
Lawrence Co.						
All Classes	6,745	100	7,213	100	468	7
$0-1,999	4,465	66	2,316	32	-2,149	- 48
$2,000-3,999	1,455	22	2,137	30	682	47
$4,000-5,999	310	5	1,665	23	1,355	437
$6,000-9,999	50	1	865	12	815	1630
$10,000+	55	1	230	3	175	318
Median Family Income	$1,245		$3,178		$1,933	155
Tennessee						
All Classes	808,145	100	893,622	100	85,477	11
$0-1,999	389,070	48	226,925	25	-162,145	- 42
$2,000-3,999	246,915	31	225,486	25	- 21,429	- 9
$4,000-5,999	87,695	11	189,731	21	102,036	116
$6,000-9,999	35,540	4	182,175	20	146,635	413
$10,000+	13,540	2	69,305	8	56,085	424
Median Family Income	$1,983		$3,949		$1,966	99

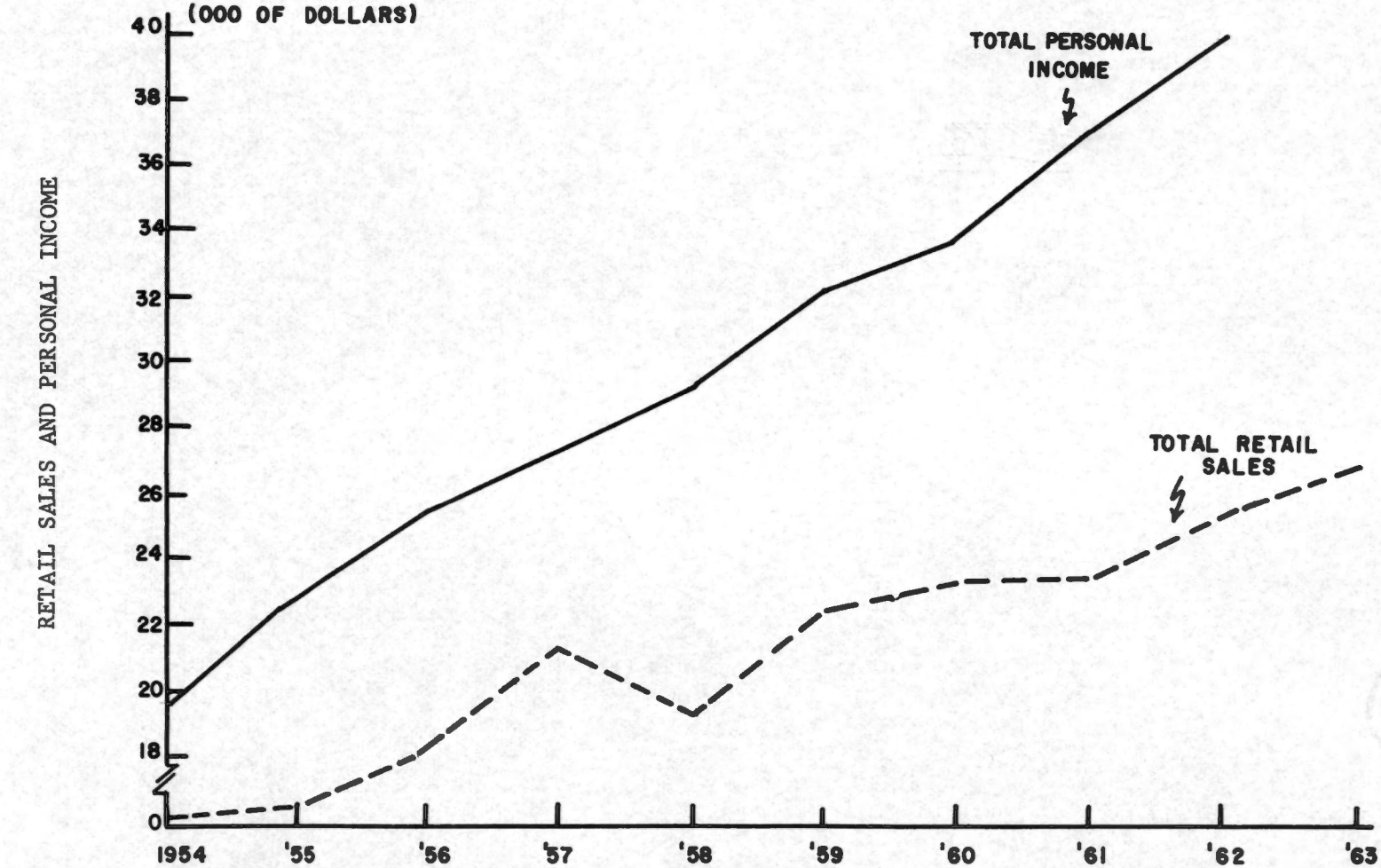
Sources: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. 1, Part 44, Tennessee (Washington: Government Printing Office, 1963), pp. 44-163 and 44-242; and United States Bureau of the Census, Seventeenth Census of the United States: 1950. Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), pp. 42-50 and 42-117.

In summary of the impact of industrial development upon personal income, there was found a considerably faster rate of growth in personal income in Lawrence County compared to the State. The evidence seems to justify the conclusion that there was a positive relationship between industrial development and personal income. The year 1956 marked a vast change in Lawrence County's economy. From the information available, it seems that industrial development was responsible largely for these changes.

IV. IMPACT ON RETAIL SALES

Estimates of retail sales in Lawrence County showed that total retail sales increased from $16,175,000 in 1954 to $27,018,000 in 1963, or 67 per cent. The State had a 43 per cent increase in total retail sales during the same ten year period. The city of Lawrenceburg had a 48 per cent increase in total retail sales from 1954 to 1963. Lawrenceburg, which accounted for three-fourths of all Lawrence County retail sales in 1954, accounted for only half of the increase in retail sales in the County during the 1954-1963 period.

Retail sales in Lawrence County, unlike total personal income, felt the effects of nationwide recessions in 1958 and 1960. Retail sales were more volatile than personal income over the entire 1954-1963 period (Figure 8). The two trends did separate more as both increased, but this would certainly be expected since it was indicated that the marginal propensity to consume would not be equal to one over any long period of time. There is also another reason why the two trends may separate.



Sources: Ormond C. Corry and Patricia Ann Price, Population and Personal Income Estimates for Tennessee Counties, 1950-1962; and Sales Management, 1954-1963.

Figure 8. Total personal income and retail sales in Lawrence County, 1954-1963.

Because the rate of increase in retail sales fell short of the rate of increase in personal incomes in the 1954-1963 period, there is good reason to believe that Lawrence County had a substantial leakage of retail sales to surrounding counties. Modern means of transportation and communication give people a larger area in which to shop.

Per capita personal income and per capita retail sales data revealed the same trend patterns as total personal income and total retail sales data revealed, due largely to the small variation in total population from 1954 to 1963. Both total and per capita retail sales increased more rapidly in Lawrence County than in Tennessee during the 1954-1963 period. Estimated per capita retail sales in Lawrence County increased from $596 in 1954 to $899 in 1963, a 50 per cent increase. Estimated per capita retail sales in the State increased from $811 in 1954 to $1,061 in 1963, a 31 per cent increase (Table IX). Lawrence County was apparently enjoying a boom from 1955 to 1957 while the State's economy was feeling the effects of the business recession. Tennessee's total sales tax receipts rose only 5 per cent between 1955 and 1958 while Lawrence County's climbed 21 per cent.

The impact of industrial development on retail sales in Lawrence County was not evenly distributed among the various types of retail groups. The change in sales receipts for food was not significant when compared with the State or Lawrenceburg. The changes in retail sales for general merchandise and automotives were significant when compared with the State. Lawrence County had a 139 per cent increase in general merchandise sales receipts from 1954 to 1963 while Tennessee had a 69

TABLE IX

RETAIL SALES ESTIMATES FOR LAWRENCE COUNTY AND TENNESSEE, 1954 AND 1963

Division	Total Retail Sale Estimates				Per Household Retail Sale Estimates			
	1954	1963	Change 1954-1963 Dollar	%	1954	1963	Change 1954-1963 Dollar	%
Lawrence County	$ 16,175	$ 27,018	$ 10,843	67	$ 2,247	$ 3,464	$ 1,217	54
Tennessee	2,728,493	3,914,556	1,186,063	43	3,010	3,760	750	25
Lawrenceburg	12,339	18,260*	5,921	48	-	-	-	-

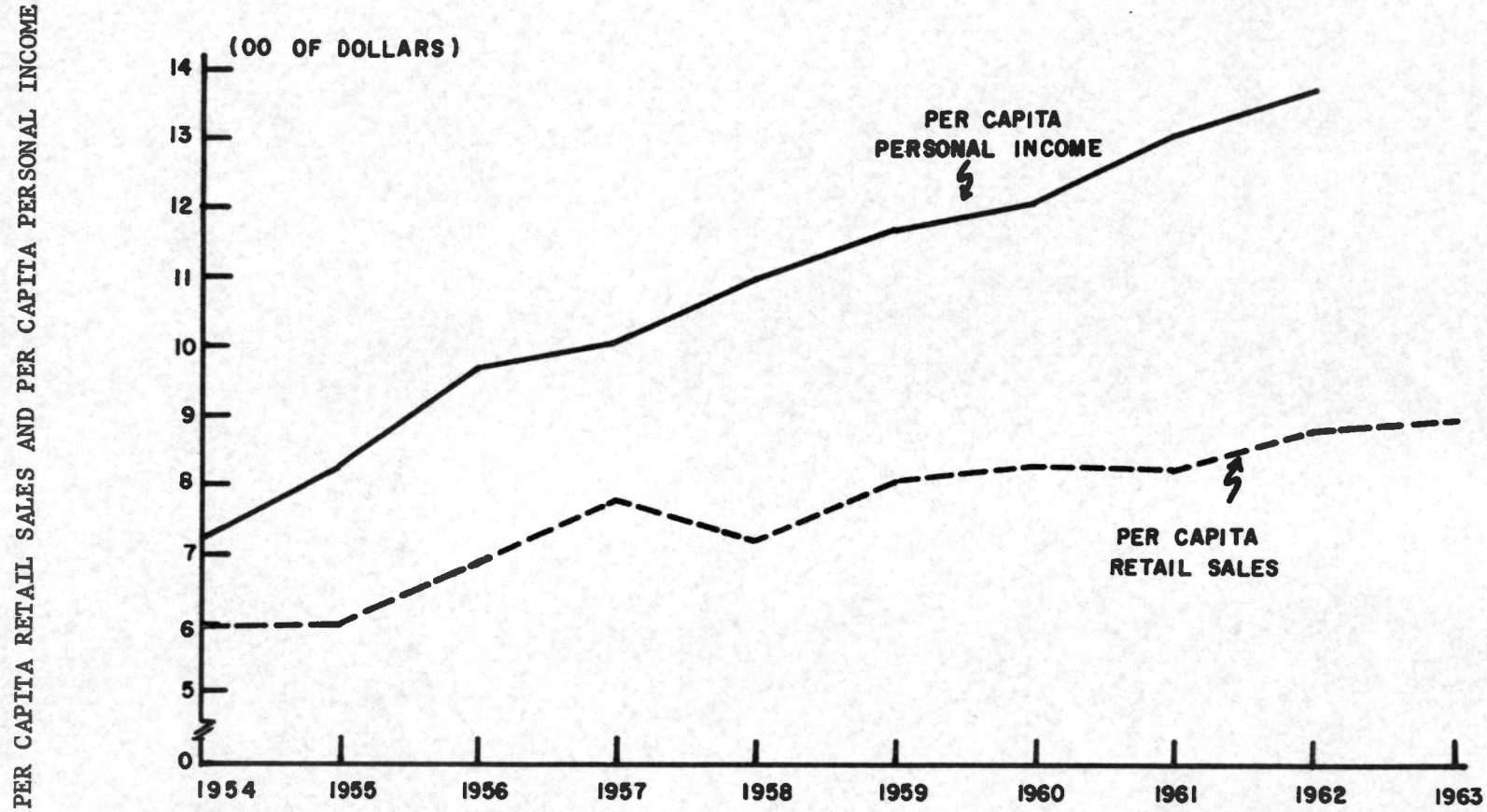
*1961 Data.

Sources: Sales Management, Survey of Buying Power, May-June, 1964, The Magazine of Marketing (New York: Bill Brothers Publication, 1963), pp. 488-496; and Sales Management, Survey of Buying Power, Vol. 72, Part 2, The Magazine of Marketing (New York: Bill Brothers Publication, 1955), pp. 667-678.

per cent increase. Lawrence County had a 97 per cent increase in automotive sales receipts from 1954 to 1963 compared with a 31 per cent increase for the State.

It becomes necessary to assume some kind of relationship between industrial development and retail sales since it has already been assumed that there is a direct relationship between industrial development and personal income. There is some interdependence between personal income and consumption, if Keynes' theory is accepted. The question of whether consumption is a short run or long run function of income is not too important in this study. It is only necessary for a relationship to exist between income and consumption. Once this association has been made, then it can be said that industrial development in Lawrence County did affect retail sales in a positive direction.

Had the increase in per capita retail sales been more nearly the magnitude of the increase in per capita incomes, the impact of industrial development on Lawrence County's employment would have been much greater than it actually was. But, as was stated earlier, this impact did not take place because of retail sale leakages outside the County. Estimates of retail sales over time indicate that this impact has become weaker since 1959 because the loss in retail sales has become greater since that time. From 1954 to 1959 per capita retail sales in Lawrence County followed the general direction of per capita personal income (Figure 9). But, since 1959 the rate of increase in per capita retail sales has declined relative to the rate of increase in per capita personal income. These data indicate that Lawrence County's residents have been increasing



Sources: Ormond C. Corry and Patricia Ann Price, Population and Personal Income Estimates for Tennessee Counties, 1950-1962; and Sales Management, 1954-1963.

Figure 9. Per capita personal income and retail sales in Lawrence County, 1954-1963.

their purchases of out-of-county goods and services more regularly since 1959. Consequently, this act has been reducing the magnitude of the local impact of industrial development upon the County's economy. Hence, Lawrence County is not receiving the full reward for its efforts in industrialization.

In conclusion of this section on the impact of industrial development on Lawrence County's economy, a brief glance at the relative changes will give some idea of the impact of industrial development on important economic variables. When Lawrence County population and income data are presented as the percentage of the State total with 1950 percentages equal 100, some important trends can be examined (Figure 10). Lawrence County ranked second among all Tennessee counties in terms of percentage increase in per capita personal income from 1950 to 1962. Moore County is the only county that ranked higher over that period. On the same grading system Lawrence County's population index decreased from 100 in 1950 to 91 in 1962, while personal income percentage increased from 100 in 1950 to 124 in 1962. Lawrence County had a relatively large increase in per capita personal income from 1950 to 1962 when compared to other counties in Tennessee.

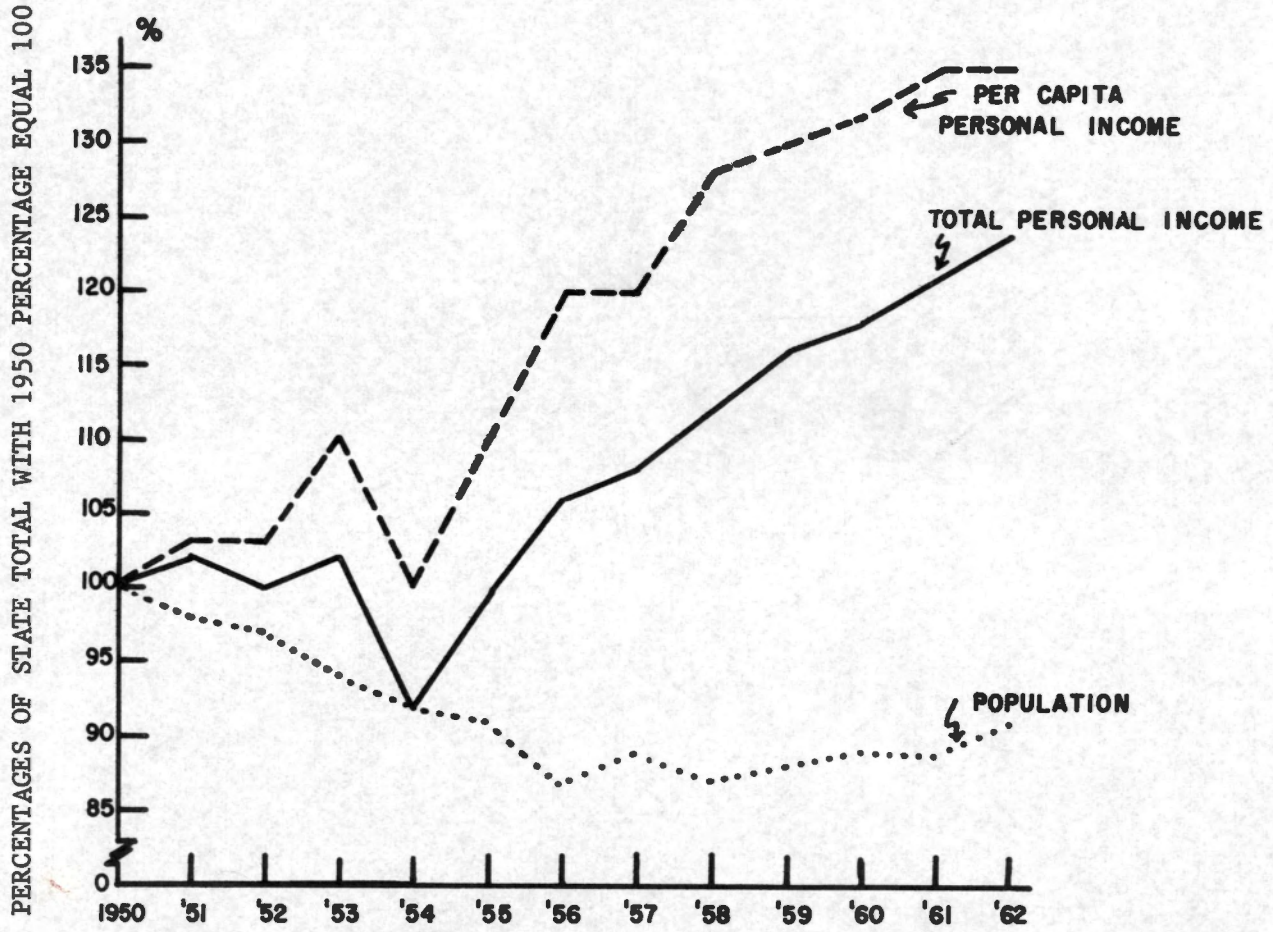


Figure 10. Index of relative changes: total population, total personal income, and per capita personal income, Lawrence County, 1950-1962.

CHAPTER III

IMPACT OF INDUSTRIAL DEVELOPMENT ON AGRICULTURE IN LAWRENCE COUNTY

I. CHANGES IN FARMS AND TYPES OF FARMING

Farm Numbers

The total number of farms in Lawrence County decreased from 3,154 in 1954 to 2,438 in 1959, a 22.3 per cent decrease. This decrease was typical of most Tennessee counties for the 1954-1959 period. The State had a 22.4 per cent decrease in number of farms.

Types of Farms

Changes in types of farming may be a function of any one or a combination of several factors. These factors may be grouped into four broad classes: (1) physical, (2) biological, (3) economic, and (4) social. Probably the most important of these in the long run are economic factors. The prime economic forces initiating change in type of farming are changes in the availability or cost of important production inputs and changes in the market value of output.

Cotton farms made up 45 per cent of all farms in Lawrence County in 1954. Other field crops made up a small proportion of the total farms. Farms classified as miscellaneous and unclassified made up 33 per cent of the total. Poultry and livestock farms were the only classified types of farms which increased over the 1954-1959 period.

Cotton farms decreased 59 per cent over the period but still remained the most important type of farm in 1959 (Table X).

Theoretically, industrial development would be expected to enhance land values. If so, then it is possible to assume some relationship between industrial development and changes in type of farming. Types of farming that were profitable when land was valued at $50 per acre might not cover average cost when land is valued at $100 per acre. This theory suggests a continuous adjustment of land use to land values as land values increase.

Evidently, Lawrence County did not have enough industrial development to influence value of land considerably during the 1954-1959 period. The per cent increase in average value of land and buildings for all farms in Lawrence County was 77.4 per cent for the 1954-1959 period. The State had a 66.0 per cent increase in land and building values for the same period.

Crops. Cotton acreage has decreased rapidly since 1950, but cotton is still the main cash crop (Table XI). Cotton acreage decreased 36.7 per cent from 1954 to 1959. Lawrence County, as well as most of the southwestern part of central Tennessee, was at one time a specialized cotton producing area. Corn now occupies a larger acreage than any other crop. Corn acreage also declined (-29.3 per cent) during the 1954-1959 period. Small grains acreage, with the possible exception of rye, decreased over the 1954-1959 period. Rye acreage remained about the same. Hay acreage increased 54.8 per cent over this same period. Sorghum

TABLE X

TYPES OF FARMS IN LAWRENCE COUNTY, 1954 AND 1959

Types of Farms	1954		1959		Change 1954-1959	
	No. of Farms	% of Total	No. of Farms	% of Total	No.	%
Field Crops (other than vegetables, fruit, and nuts)	1,537	48.7	638	26.2	-899	-58.4
Cash grain	70	2.2	45	1.8	- 25	-35.7
Cotton	1,412	44.8	573	23.5	-839	-59.4
Other field crops	55	1.7	5	.2	- 50	-90.9
Vegetable	10	.3	-	-	- 10	-100.0
Fruit and Nut	10	.3	10	.4	0	0
Dairy	136	4.3	70	2.9	- 66	- 48.5
Poultry	5	.2	20	.8	15	300.0
Livestock (other than dairy and poultry)	107	3.4	161	6.6	54	50.5
General	328	10.4	206	8.4	-122	-37.2
Miscellaneous and Unclassified	1,051	33.3	1,333	54.7	-282	-26.8
Total Farms	3,154	100.0	2,438	100.0	-716	-22.3

Sources: United States Bureau of the Census, United States Census of Agriculture: 1959, Counties, Vol. I, Part 31, Tennessee (Washington: Government Printing Office, 1961), p. 180; and United States Bureau of the Census, United States Census of Agriculture: 1954, Counties and State Economic Areas, Vol. I, Part 20, Tennessee (Washington: Government Printing Office, 1956), p. 86.

TABLE XI

ACREAGE OF THE PRINCIPAL CROPS IN LAWRENCE COUNTY, 1929, 1939, 1949, 1954, AND 1959

Crops	1929	1939	1949	1954	1959	Change 1954-1959	
						No.	%
Corn for all purposes	47,671	47,375	43,809	38,984	27,518	-11,406	-29.3
Cotton	32,573	22,198	35,109	22,549	14,269	- 8,280	-36.7
Small grains	3,434	3,881	8,865	14,253	10,994	- 3,259	-22.9
Wheat	2,477	2,260	3,987	4,814	4,179	- 635	-13.2
Oats	322	684	1,848	4,701	4,697	- 4	- .1
Rye	635	926	2,112	3,169	1,457	- 1,712	-54.0
Barley	-	11	918	1,569	661	- 908	-57.9
Soybeans	4,178	5,782	3,851	3,654	1,142	- 2,512	-68.7
Grown alone	4,049	5,742	3,719	3,610	1,051	- 2,559	-70.9
Grown with crops	129	40	132	44	91	47	106.8
Hay	11,218	20,137	17,924	13,187	20,416	7,229	54.8
Alfalfa	183	324	1,292	554	751	197	35.6
Clover and Timothy	768	419	327	197	400	203	103.0
Lespedeza	-	10,753	10,331	6,389	7,756	1,367	21.4
Legumes	6,240	6,337	3,183	2,795	1,051	- 1,744	-62.4
Small grains	1,373	809	945	2,125	542	- 1,583	-74.5
Other	2,654	1,455	1,846	1,127	467	- 660	-58.6
Sorghum (except syrup)	436	407	442	1,452	1,650	198	13.6
Tobacco	333	188	289	275	275	0	0
Irish Potatoes	585	818	208	87	69	- 18	-20.7
Sweet Potatoes	869	749	331	244	159	- 85	-34.8

Source: Joseph P. Overton and others, Soil Survey of Lawrence County, Tennessee, Series 1952, No. 6, United States Department of Agriculture, Tennessee Agricultural Experiment Station, and Tennessee Valley Authority (Washington: Government Printing Office, June, 1959), p. 4.

acreage showed a slight increase also. Acreage in tobacco, Irish potatoes, and sweet potatoes decreased over the same time period.

Fewer field crop farms--cotton, cash grain, and tobacco--indicate a trend toward other forms of specialization. The increase in poultry and livestock farms substantiates this point.

Livestock. Even though the number of livestock farms increased from 107 in 1954 to 161 in 1959 (50 per cent), the number of cattle and calves on farms decreased from 19,818 in 1954 to 16,495 in 1959 (-16.8 per cent) (Table XII). Horses and mules continued to decrease in number over the 1954-1959 period (-40 per cent). Hogs and pigs and sheep and lambs showed increases over this same period, 81.8 per cent and 50.1 per cent, respectively.

Lawrence County seems to have been experiencing two opposing trends in livestock numbers for the 1954-1959 period. As in most rural counties, the number of livestock was diminishing in Lawrence County while at the same time industrial development was increasing the demand for livestock and livestock products. The reason for the increased demand here would be the local market created by a concentration of the population.

Survey data taken in 1958 and 1963 showed that a greater per cent of part-time farmers increased their livestock number than full-time farmers did (Table XIII). This was true for both 1953-1958 and 1958-1963 periods, but the greatest difference was in the latter period where 54 per cent of the part-time farmers reporting increased their livestock

TABLE XII

LIVESTOCK AND POULTRY ON FARMS IN LAWRENCE COUNTY, 1930, 1940, 1950, 1954, AND 1959

Livestock and Poultry	1930	1940	1950	1954	1959	Change 1954-1959 No.	Change 1954-1959 %
Horses and mules	7,139	6,778[a]	5,428	2,949	1,770	- 1,179	-40.0
Cattle and calves	9,778	10,798[a]	16,506	19,818	16,495	- 3,323	-16.8
Hogs and pigs	7,580	9,974[b]	14,128	11,444	20,802	9,358	81.8
Sheep and lambs	860	655[c]	1,518	1,568	2,367	799	50.1
Chickens	109,872[a]	107,636[b]	111,034[b]	114,150[b]	88,382	- 25,768	-22.6
Turkeys	68[d]	102[d]	912[d]	3,704	2,859	- 845	-22.8

[a] Three months old and over.

[b] Four months old and over.

[c] Six months old and over.

[d] One year earlier than date given at head of column.

Source: Joseph P. Overton and others, Soil Survey of Lawrence County, Tennessee, Series 1952, No. 6, United States Department of Agriculture, Tennessee Agricultural Experiment Station, and Tennessee Valley Authority (Washington: Government Printing Office, June, 1959), p. 5.

TABLE XIII

CHANGE IN ALL LIVESTOCK ON FARMS IN LAWRENCE COUNTY, 1953-1958 AND 1958-1963

Farmer Status	Units of Livestock on Farms, 1953-1958								
	Increased		Decreased		Change		Not Reported		Total
	No.	%	No.	%	No.	%	No.	%	No.
Full-time	33	37.1	26	29.2	20	22.5	9	10.1	89
Part-time	48	39.3	52	42.6	22	18.0	0	0	122
Total	81	38.4	78	37.0	42	19.9	9	4.3	211
	Units of Livestock on Farms, 1958-1963								
	Increased		Decreased		Change		Not Reported		Total
	No.	%	No.	%	No.	%	No.	%	No.
Full-time	7	41.2	4	23.5	4	23.5	0	0	17*
Part-time	20	54.1	7	18.9	6	16.2	4	10.8	37
Total	27	50.0	11	20.4	10	18.5	4	7.4	54

*Two were not applicable.

number and 41 per cent of the full-time farmers reported the same.

Part-time Farms

The combination of farming with industry is not new. Even before the industrial revolution, people had two jobs. And the income data presented in this paper indicate there are still reasons for rural residents to hold non-farm jobs and to farm at the same time. The two factors which govern the extent of part-time farming are industrial employment opportunities and the availability of land and other resources for farming. Since 1956, Lawrence County has offered both.

Farmers who worked off their farms one hundred days or more increased in Lawrence County from 747 in 1954 to 1047 in 1959, an increase of 40.2 per cent. This figure was the highest for all Tennessee counties. Tennessee showed a decrease in part-time farmers for the 1954 to 1959 period. Nevertheless, it is possible that the number of part-time farmers increased near industrial centers. Data was not available to substantiate the possibility.

Probably, the operators of the smaller farms became part-time farmers. This was indicated by income data presented in Table XIII which shows part-time farmers as having an average product sales of only $1,250 in 1958--about half the product sales of the full-time farmers. Part-time farms averaged 75 acres in size; full-time farms averaged 125 acres.

Survey data in 1958 showed that the people who had quit farming were those who had had smaller farms under 20 acres in size. Only 8 per cent had lived on farms with 200 acres or more. The average size

of all farms in the County in 1959 was 106 acres. Full-time farms were approximately 125 acres in size. It seems reasonable to assume that as non-farm opportunities became better and more numerous more farmers with larger size farms would be drawn into industrial jobs. The decision of the farmer is mostly an economic one. He must weigh one alternative against the other.

What Happened to the Farms

Of the total of 168 non-farmers interviewed in 1958, 47, or 28 per cent, were previous farm owners. These previous farm owners were asked "What did you do with your farm?" Over half of these reported they sold their farms; 25 per cent were sold and not combined with other farms. Approximately 28 per cent of the former operators rented their farms--half of which were combined with other farms and half not. Some 13 per cent of these farm owners reported their farms were idle at present. The trend was toward selling rather than renting or letting them remain idle. These findings support a possibility mentioned earlier, that industrial development may increase farm ownership due to increased incomes brought about by new industrial jobs. Farmers have a strong tendency to own their farms, and they usually buy when they are financially able.

The evidence here seems to indicate that the draining off of farm labor can contribute to farm enlargement. The question is, does subdivision of other farms offset the tendency toward farm consolidation? Evidently, it did not in this instance.

The answer given most often to why the farm was idle was that the owner had a non-farm job. With the increase in industrial jobs in Lawrence County, this answer could easily be expected. Other answers given to why the farms remained idle were: (1) a shortage of farm labor, (2) physically unable to tend farm, and (3) farm sowed down in crops. Interestingly, not a single owner reported insufficient capital as a reason for an idle farm.

Evidently the owners of idle farms have no intention of selling in the future. Not a single owner of an idle farm reported he intended to sell in the future. It seems that full-time farmers who continued to farm added to their farms by renting other land. Surprisingly, 23 per cent of the owners of idle farms who reported said they would let their land lie idle rather than sell. No one said he would return to farming.

The data concerning idle farms above seems to support the view held by many people, that industrial development increases idle land by drawing owners into industrial work. This could very well be true in the early stages of industrial development.

II. CHANGES IN FARM INPUTS

Land and Land Tenure

In 1959, about 62.5 per cent of the County's land area, or 253,415 acres, was in farms (Table XIV). In 1954, about 74.2 per cent of the County, or 301,083 acres was in farms. Cropland made up 52.9 per cent of the total land in farms in 1954 and 54.9 per cent of the total land in farms in 1959. Thus, from 1954 to 1959, total land in farms

TABLE XIV

USE OF FARM LAND IN LAWRENCE COUNTY IN 1954 AND 1959

Land Use	1954		1959		Change	
	Acres	% of Total	Acres	% of Total	No.	%
Cropland (total)	159,355	52.9	139,215	54.9	-20,140	-12.6
Harvested	94,696	31.5	66,895	26.4	-27,801	-29.4
Used only for pasture	35,505	11.8	36,015	14.2	510	1.4
Not harvested for pasture	29,154	9.7	36,305	14.3	7,151	24.5
Woodland (total)	106,746	35.5	85,886	33.9	-20,860	-19.5
Pastured	34,614	11.5	22,499	8.9	-12,115	-35.0
Not pastured	72,132	23.9	63,387	25.0	- 8,745	-12.1
Other Land Pastured	24,097	8.0	19,442	7.7	- 4,655	-19.3
Land Pastured (total)	94,216	31.3	77,956	30.8	-16,260	-17.3
Other Land	10,885	3.6	8,872	3.5	- 2,013	-18.5
Total Land in Farms	301,083	100.0	253,415	100.0	-47,668	-15.8

Sources: United States Bureau of the Census, United States Census of Agriculture: 1959. Counties, Vol. I, Part 31, Tennessee (Washington: Government Printing Office, 1961), p. 148; and United States Bureau of the Census, United States Census of Agriculture: 1954, Counties and State Economic Areas, Vol I, Part 20, Tennessee (Washington: Government Printing Office, 1956), p. 66.

declined 15.8 per cent. Cropland and woodland accounted for most of the decrease in land in farms over the 1954-1959 period. All agricultural uses of land, with the exception of cropland not harvested, showed decreases over the 1954-1959 period. Industrial development increases the demand for non-agricultural uses of land, but it is doubtful that the total demand was that strong in Lawrence County between 1954 and 1959.

Data reviewed in research by the author revealed that there are more tenants in industrialized areas.[1] The reason given for industrial regions having more tenants was that owners of farms near industrial areas often take other types of work, leaving the farms for tenants. The better markets near industrial areas offer the tenants more profits. Tenants may be forced to farm less acres; but, nevertheless, farming is more lucrative near the industrial areas. The fault in this argument is that those who could become tenants may take non-farm jobs even before the farm owners do. Then, there would be no tenant labor available.

But, also there are several reasons for the reduction of tenants when industry moves into a community. Greater incomes, created by industrial development, enable a larger number of people to own farms. Industrial development competes with farming for land, raising the price of land and causing the marginal tenant to move out. Part-time farming

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[1]Charles E. Allred and Jasper P. Burnett, The Effect of Industrial Development on Agriculture, Rural Research Monograph No. 87 (Knoxville: The University of Tennessee Agricultural Experiment Station), pp. 32-34.

near industrial areas tends to reduce farm size, increasing the number of owners and decreasing the need for tenants. This is the line of logic considered by the author to be more tenable concerning the impact of industrialization on farm tenancy. The following data supports this view.

The per cent of farms in Lawrence County operated by tenants decreased 10.4 per cent during the 1954-1959 period. Lawrence County had a farm tenancy rate of 13.4 per cent in 1959. Survey data indicated that over the 1958-1963 period the per cent of tenants remained almost constant. The per cent of owners showed a slight decrease, 77.3 to 74.1 per cent, but the per cent of part-owners increased from 3.3 per cent in 1958 to 11.1 per cent in 1963 (Table XV).

The per cent of full-time farmers who were owners increased from 71.9 per cent in 1958 to 81.4 per cent in 1963. The per cent of part-time farmers who were owners decreased from 81.1 per cent to 70.3 per cent. The per cent of part-time farmers who were part owners increased over the 1958-1963 period.

Labor and Wage Rates

Due to advancement and improvement in production methods in agriculture and machinery, there is a smaller demand for labor on the farm today. One man can do the work today that it took two men to do 25 years ago. Nevertheless, there is still a demand for labor on farms. There is still work to be done that cannot be done by machines.

In the 1958 survey, 42 per cent of 122 full-time farmers reported a decreasing labor force over the 1953-1958 period; 51 per cent reported

TABLE XV

TENURE OF LAWRENCE COUNTY FARMERS, 1958 AND 1963

Year Status	Total	Owner		Part Owner		Renter	
		No.	%	No.	%	No.	%
1958							
Full-time	89	64	71.9	4	4.5	10	11.2
Part-time	122	99	81.1	3	2.5	17	13.9
Total	211*	163	77.3	7	3.3	27	12.8
1963							
Full-time	17	14	81.4	0	0	3	17.6
Part-time	37	26	70.3	6	16.2	5	13.5
Total	54	40	74.1	6	11.1	8	14.9

*Total includes 5 croppers and 9 hired workers.

a constant labor force; and only 7 per cent reported an increasing labor force. Part-time farmers reported a constant labor force over the same period. The number of full-time workers over 17 years old, other than the operator on farms in Lawrence County, declined from an average of 1.8 per farm in 1953 to less than 1 per farm in 1962. This decrease in number of workers for full-time farms was from an average of 2.3 workers per farm in 1953 to an average of 1.2 workers per farm in 1962. For part-time farms, the decrease was from an average of 1.4 workers in 1953 to an average of .6 workers per farm in 1962. For both full-time and part-time farms, the decrease in average number of full-time workers per farm was about 50 per cent. Thus, it is clear that the number of hired or family workers, other than operator, is decreasing.

Improvement in agricultural methods and machinery is not the sole reason for the decrease in farm labor. The more important reason is that labor is attracted into non-farm employment by higher wages. Farmers reported almost without exception they put their crops in the Soil Bank in 1958 because of (1) a labor shortage on their farms, or because (2) they feared they would not be able to hire enough labor at wages they could afford to pay to produce and harvest the crop.

Industry does compete with farming for laborers, but is it reasonable to say that industrialization in Lawrenceburg accounted for all of the decrease in the farm labor force? It is not. Industrial development in other parts of the country or nation may have accounted for a majority of the decreasing labor force. But industrial development in Lawrenceburg was a factor in the flow of local laborers from farm to non-farm employment.

To the question, "Have you had any trouble in recent years getting all the labor you needed?", 41 per cent of full-time farmers and 25 per cent of part-time farmers said "Yes!" in 1958. The most important reasons given were: (1) most farm laborers have taken non-farm jobs, and (2) available labor is not dependable when needed. Only about 6 per cent of all farmers said the reason for the labor shortage was because all the farmers needed help at the same time.

It does appear that industrialization affects the quality and quantity of farm labor. Not only does industry draw laborers away from farms, but it perhaps attracts the most productive part of the agricultural labor force. The reason these productive laborers leave the farm is, in most cases, an economic one. They may personally prefer to live on the farm but the higher non-farm wages tip the scales in favor of industrial employment

The return to labor is subject to the law of supply and demand. If it is true that industry competes with agriculture for labor, then wages should be higher in those areas where competition exists. Farm wage rates per day in 1953 in the County stood at $3.50; by 1958 the wage rate had increased to slightly over $5.00 per day. It is almost certain that industry was an important factor in increasing farm wage rates.

The effects of increased farm wage rates are often misunderstood. Farmers will argue that increased farm wage rates is bad; laborers will say it is good. The truth is that higher farm wage rates can be both good and bad. Because of higher wage rates, farmers face problems in

adjusting their farm operations to changing local conditions. Clearly, this could be called an undesirable effect for individual farmers. But the economist might argue that farmers in general are better off when wage rates are high. This argument is based on the economic flow variables within an economy. With a constant propensity to consume, laborers will consume more as wage rates increase. This increased demand will raise prices of goods so that a better market exists for all goods. But, this is only part of the change, for farm prices in general will not increase as much as will most non-farm goods because of the inelastic demand for most farm products, which tends to dampen or even nullify the effect of increased industrial development on farm prosperity.

There can be long run benefits accruing to individual farmers as a result of wage rate increases. Those farmers who are able to substitute capital for labor and thereby reduce per unit cost of production may in the long run gain real advantages. The fact seems clear, though, that many farmers fail to make these adjustments and as a result suffer economic loss as a result of increases in wage rates.

Capital Investment

It seems reasonable to assume that industrialization would have an impact on capital investment by farmers. It was assumed earlier that industrial development increases income of both farmer and non-farmer. Industrial development increased non-farm income directly by increasing employment and increased farm income indirectly by drawing surplus farmers into non-farm employment and increasing the farm income share of the remaining farmers.

With the preceding relationships, there remains only one link to be fastened before it is possible to assume a direct relationship between industrial development and capital expenditures on the farm. Here, it is necessary to hold consumption for consumer goods constant in order to have a functional relationship between income and new investment. This assumption of the relationship between income and capital expenditure is purely economic--profit maximization. It must be assumed that farmers are led by profit motives, and that they will increase their capital expenditures whenever it is profitable to do so. If this is true, then farmers will increase their capital expenditures because, in general, more capital-intensive methods produce more at the same cost than less capital-intensive methods.[2] The preceding statement is assuming that the marginal productivity of capital is greater than the marginal productivity of the resources replaced by capital; the interest rate must be included also, because the percentage yield of the asset must exceed the interest rate.

Capital expenditures did increase for full-time farmers from the 1953-1958 period to the 1958-1963 period some 23 per cent (Table XVI). But part-time farmers decreased their average annual capital expenditures per farm from the 1953-1958 period to the 1958-1963 period 21 per cent from $280 in 1953-1958 to $220 in the 1958-1963 period.

Considering the fact that a part-time farmer received an average of only $250 from his farm in 1958, one could conclude that the decision

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[2] Gardner Ackley, Macroeconomic Theory (New York: MacMillan Company, 1961), p. 467.

TABLE XVI

AVERAGE CAPITAL EXPENDITURES FOR NEW INVESTMENT BY LAWRENCE COUNTY FARMERS, 1953-1958 AND 1958-1963

Status of Household Head	Average Annual Capital Expenditures (in five year periods)		Change 1953-1958 to 1958-1963	
	1953-1958	1958-1963	Dollar	Per cent
Full-time Farmer	$183.15	$225.16	$42.01	23
Part-time Farmer	280.01	220.98	-59.03	-21

of the part-time farmers to spend less money on new investment was a rational decision. It could be that investment in part-time farms is not profitable.

Another possible answer for the decrease in capital expenditures by part-time farmers from 1958 to 1963 could be that people who farmed and worked in industry also did the former solely for pleasure, paying little attention to the most profitable combination of capital and land. Part-time farmers were investing on the average about 40 per cent more than full-time farmers in 1953-1958 and almost as much as full-time farmers in the 1958-1963 period. This happened in spite of the fact that part-time farms were smaller, produced less, and perhaps were not very profitable enterprises. This may suggest that the availability of funds to invest was of considerable importance. This could also mean that part-time farms are really profitable in some sense.

III. CHANGES IN EMPLOYMENT OF RURAL POPULATION

In 1950, 77.0 per cent of the employed rural population were employed in agriculture. By 1960, this figure had declined to 40 per cent (Table XVII).

Not only did total rural population employed decline over the decade, but there was a change in the distribution of rural residents employed. Rural farm population employed in non-agriculture actually increased over the 1950-1960 decade--a fact which is not too hard to understand. With increasing emphasis put on rural road development in most rural counties, rural residents are able to commute to work in the

TABLE XVII

EMPLOYMENT OF RURAL FARM POPULATION, LAWRENCE COUNTY, 1950 AND 1960

Employed in:	1950		1960		Change 1950-1960	
	No.	% of Total	No.	% of Total	No.	%
Agriculture	3890	77	1114	40	-2776	-71.4
Farmers and farm management	2802	56	891	32	-1911	-68.2
Unpaid family workers	513	10	104	4	- 409	-79.7
Farm laborers	575	11	119	4	- 456	-79.3
Non-agriculture	1173	23	1707	60	534	45.5
Total employed	5063	100	2821	100	-2242	-44.3

Source: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. I, Part 44, Tennessee (Washington: Government Printing Office, 1963), pp. 44-259; and United States Bureau of the Census, Seventeenth Census of the United States: 1950. Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), pp. 124 and 136.

city while continuing to live in the country. In this way the erstwhile farmer can secure for himself the better part of two worlds, the city riches and at the same time, the peace and quiet of the farm. This is much easier to do in a small industrial region.

In types of occupation, Lawrence County's rural residents showed many changes over the 1950-1960 decade (Table XVIII). Those occupational categories which declined were: farmers and farm managers (-65.1 per cent); manager, officials, and proprietors (-20.3 per cent); farm laborers and unpaid family workers (-73.5 per cent); and other laborers (-20.3 per cent). The largest increases were made by operatives and kindred workers (113.8 per cent); clerical and kindred workers (90.6 per cent); and craftsmen, foreman, and kindred workers (48.5 per cent). These employment trends for the population are consistent with other data used for support of the thesis presented in this report.

Survey data showed no significant differences in job classification between part-time farmers and rural non-farm workers (Table XIX). Around 33 per cent of part-time farmers in 1958 were employed as laborers, other than farm and mine, compared to 37 per cent for rural non-farm workers. Craftsmen and foremen made up 27 per cent of part-time farmers and 23 per cent of rural non-farm workers.

Data for part-time farmers and rural non-farm workers showed practically no difference in type of industry (Table XX). Manufacturing was the predominant type of industry with 41 per cent for both the part-time farmer and the rural non-farm worker.

TABLE XVIII

EMPLOYMENT OF RURAL POPULATION, LAWRENCE COUNTY, 1950 AND 1960

Occupation	1950		1960		Change	
	Total	% of total	Total	% of total	Total	%
Professional, technical, and kindred workers	232	3.3	262	4.5	30	12.9
Farmers and farm managers	2,802	41.3	891	17.5	-1,911	-68.2
Mgrs., officials, and props., except farm	227	3.2	181	3.1	- 46	-20.3
Clerical and kindred workers	171	2.4	326	5.6	155	90.6
Sales Workers	220	3.1	292	5.0	72	32.7
Craftsmen, foreman, & kindred workers	466	6.6	692	11.9	226	48.5
Operatives and kindred workers	881	12.5	1,884	32.5	1,003	113.8
Private household workers	63	.9	125	2.2	62	98.4
Service workers except private household	133	1.9	233	4.0	100	75.2
Farm laborers, unpaid family workers*	529	7.5				
Farm laborers, except unpaid, and farm foremen*	733	10.4	344	5.9	- 918	-72.9
Laborers, except farm and mine	290	4.1	300	5.2	10	3.4
Occupation not reported	187	2.7	149	2.6	- 38	-20.3
Total	7,034		5,802		-1,232	-17.5

*Two groups are combined for 1960 and Change.

Source: United States Bureau of the Census, Eighteenth Census of the United States: 1960. Population, Vol. I, Part 44, Tennessee (Washington: Government Printing Office, 1963), pp. 44-272; and United States Bureau of the Census, Seventeenth Census of the United States: 1950. Population, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1952), pp. 42-136.

TABLE XIX

JOB CLASSIFICATION BY STATUS OF HOUSEHOLD HEAD
LAWRENCE COUNTY, 1958

Job Classification	Total No. of People	Per Cent	Part-time Farmer	Per Cent	Non-Farm Workers	Per Cent
Professional, Technical, and Kindred Workers	11	4	4	3	7	5
Manager, Officials, and Proprietor	22	7	16	10	6	4
Clerical and Kindred Workers	12	4	6	4	6	4
Sales Workers	14	5	9	6	5	3
Craftsmen, Foremen	76	25	42	27	34	23
Operative and Kindred	30	10	14	9	16	11
Laborers, Except Farm and Mine	106	35	52	33	54	37
Occupation not Reported	19	6	10	6	9	6
Others	12	4	4	3	8	6
Totals	302		157		145	

TABLE XX

TYPE OF EMPLOYMENT FOR RURAL RESIDENTS IN LAWRENCE COUNTY IN 1958

Type of Industry	Total No. of People	Per Cent	Part-time Farmer	Per Cent	Non-Farm Workers	Per Cent
Construction	57	20	28	19	29	21
Manufacturing	117	41	61	41	56	41
Transportation, Commercial, and Public Utilities	16	6	10	7	6	4
Wholesale and Retail Trade	32	11	18	12	14	10
Public Administration	30	11	14	10	16	12
Other	32	11	16	11	16	12
Totals	284		147		137	

IV. INCOME AND LEVEL-OF-LIVING

Total net farm income for the county decreased from 1954 to 1959; but because the number of farmers in the County decreased over the period, average family farm income increased from 1954 to 1959. Total net farm income decreased 27 per cent in Lawrence County and 16 per cent in Tennessee from 1955 to 1962 (Table XXI).

Farm product sales in Lawrence County increased 15 per cent from 1954 through 1959 (Table XXII). Crop receipts decreased 2 per cent while total value of livestock products sold increased 54.5 per cent. The State showed even a greater decline in crop sales during the 1954-1959 period (-17.4 per cent), while livestock and livestock product sales increased 58.7 per cent. Unlike the State, Lawrence County showed a decrease in poultry and poultry products sold and in dairy products sold for the 1954-1959 period. Average farm product sales for Lawrence County's farmers increased from $1,577 in 1954 to $2,345 in 1959, an increase of 49 per cent. The State had a 73 per cent increase in average farm product sales during the same time period. One of the factors that accounts for the difference in average farm product sales between Lawrence County and the State is field crops, other than vegetables, fruits, and nuts, sold. The State had a 14.6 per cent increase compared to a 1.1 increase for Lawrence County. Reference was made earlier to the fact that Lawrence County experienced a change in type of farming from general farming to a more specified type during the 1954-1959 period.

TABLE XXI

ESTIMATES OF FARM OPERATORS' GROSS AND NET INCOME FROM FARMING IN LAWRENCE COUNTY AND STATE, 1955 AND 1962

Area / Items	1955	1962	Change No.	Change %
	(In thousands)			
Lawrence County				
Realized gross garm income				
Cash receipts farm marketings	$ 6,214	$ 5,634	$ -580	- 9.3
Government payments	120	842	722	601.7
Value of home consumption of farm	1,490	845	-645	-43.3
Gross rental value of farm dwellings	435	578	143	32.9
Total farm income	8,259	7,899	-360	- 4.4
Farm production expenses	-4,000	-4,318	318	7.9
Realized net farm income	4,259	3,581	-678	-15.9
Net change in farm inventories	701	34	-667	-95.1
Total net farm income	4,960	3,618	-1,342	-27.1
State				
Realized gross farm income				
Cash receipts farm marketings	$453,300	$531,800	$78,500	17.3
Government payments	5,600	30,000	24,400	435.7
Value of home consumption on farm	88,300	51,600	-36,700	-41.6
Gross rental value of farm dwellings	42,200	50,800	8,600	20.4
Total farm income	589,400	664,200	74,800	12.7
Farm production expenses	-321,300	-405,400	84,100	26.2
Realized net farm income	268,100	258,800	-9,300	- 3.5
Net change in farm inventories	48,700	6,000	-42,700	-87.7
Total net farm income	316,800	264,800	-52,000	-16.4

Source: Ormand C. Corry and Patricia Ann Price, Population and Personal Income Estimates for Tennessee Counties 1950 through 1962 (Knoxville: Bureau of Business and Economic Research, 1964), pp. 123 and 135.

TABLE XXII

VALUE OF FARM PRODUCTS SOLD BY SOURCE, LAWRENCE COUNTY AND STATE, 1954 AND 1959

Source	Value of Products Sold				Change 1954-1959	
	1954		1959		Dollar	Per cent
	Dollars	% of Total	Dollars	% of Total		
Lawrence County						
All Farm Products Sold	$ 4,974,036	100	$ 5,716,455	100	$ 742,419	15
All Crops Sold	3,513,093	71	3,461,004	61	-52,089	- 2
Field Crops Sold	3,227,123	65	3,261,325	57	34,202	1
Vegetables Sold	51,285	1	49,245	1	- 2,040	- 4
Fruits and Nuts Sold	182,023	4	82,022	2	- 100,001	-55
Forest and Horticultural Prods.	52,662	1	68,412	1	15,750	30
All Livestock Products Sold	1,460,943	29	2,255,451	39	794,508	54
Poultry Products Sold	180,640	4	176,377	3	- 4,263	- 2
Dairy Products Sold	549,221	11	534,865	9	- 14,356	- 3
Other than Poultry & Dairy	731,082	15	1,544,209	27	813,127	111
State						
All Farm Products Sold	$353,215,033	100	$474,556,740	100	$121,341,707	34
All Crops Sold	208,328,531	59	244,633,435	52	-36,304,904	-17
Field Crops Sold	192,936,136	55	221,123,564	47	28,187,428	15
Vegetables Sold	3,510,479	1	5,075,558	1	1,565,079	45
Fruits and Nuts Sold	4,099,476	1	3,269,708	1	- 829,768	-20
Forest and Horticultural Prods.	7,782,440	2	15,164,605	3	7,382,165	95
All Livestock Products Sold	144,886,502	41	229,923,305	48	85,036,803	59
Poultry Products Sold	16,090,599	5	28,201,676	6	12,111,077	75
Dairy Products Sold	49,782,440	14	62,133,850	13	10,351,798	21
Other than Poultry & Dairy	79,013,851	22	139,587,779	29	60,573,928	77

Sources: United States Bureau of the Census, United States Census of Agriculture: 1954. Counties, Vol. II, Part 42, Tennessee (Washington: Government Printing Office, 1956), p. 92; and United States Bureau of the Census, United States Census of Agriculture: 1959. Counties, Vol. I, Part 31, Tennessee (Washington: Government Printing Office, 1961), p. 180.

Part-time farmers had the highest average income in the rural population. From a survey of 380 rural households taken in 1958, it was estimated that the net family income of part-time farmers was approximately $3,950. A total of $3,600 was earned off the farm, and the farm contributed a net of $350. Non-farm worker families had an average income of $3,450. Full-time farmers had family earnings of only $1,000. Family heads who were unemployed at the time of the survey reported an average income of $800, while households with retired and disabled heads reported an average income of $500 (Table XXIII).

The average income for all 380 families surveyed was $2,565. These income figures indicate that the rural population has kept pace with the County in income growth because the rate of increase in rural income has been as great as the rate of increase in income for the entire County over the 1954-1962 period. The effects of industrial development in Lawrenceburg seems to have aided not only the families in Lawrenceburg, but those of the entire County. Rural residents prosper because new industry in the city offers employment for the under employed farmers, leaving a larger share of the farm income pie for the rural residents left on the farm.

The preceding data on family income for rural residents indicate that the greatest increase in income was made by families which changed from full-time farming to part-time farming or to non-farm employment. Part-time farmers were earning about four times as much income in 1958 as full-time farmers were earning in 1950. This fact alone explains why Lawrence County led all counties in Tennessee in change in per cent of

TABLE XXIII

AVERAGE FAMILY INCOME, LAWRENCE COUNTY RURAL POPULATION, 1958

Family Head Status	No. Families	Gross cash farm income reported	Estimated net cash income from farm	Non-farm income reported	Total net-cash income
Part-time farmers	119	$1,250	$ 350	$3,600	$3,950
Non-farm workers	107	-	-	3,450	3,450
Full-time farmers	89	2,600	1,000	-	1,000
Unemployed	43	-	-	800	800
Retired	17	-	-	-	500
Disabled	5	-	-	-	500
Average (families)					2,565

Source: Joe A. Martin, "The Impact of Industrial Development upon Agriculture," Tennessee Farm and Home Science, Progress Report Number 33, (January-February-March, 1960).

farm operators working off farm one hundred days or more between 1954-1959. It also helps to explain why Lawrence County ranked high with all Tennessee counties in change in per cent of farm families whose other income exceeds the value of farm products sold 1954-1959 (21.8 per cent).

The farm operator level-of-living indexes published by the Economic Research Service included the following items: (1) average value of sales per farm, (2) average value of land and buildings per farm, (3) percentage of farms with telephones, (4) percentage of farms with home freezers, and (5) percentage of farms with automobiles. Weights for these items were derived through a factor analysis of data from the 1959 census of agriculture. This farm operator level-of-living index for Lawrence County operators was twenty-six in 1950. By 1959, this index had increased to seventy-two, a 177 per cent increase over the period.[3] This considerable increase in level-of-living index raised Lawrence County farm operators from the low ranks in 1950 to the high ranks in 1959 when Lawrence County is compared with other counties in the State. When compared with all counties in the United States, Lawrence County rose from the bottom quintile in 1950 to near the fourth quintile in 1959. Lawrence County actually ranked above the average of all the states in the East South Central Region, with the exception of Kentucky which it tied in 1959.

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[3] James D. Cowhig, Farm Operator Level-of-Living Indexes for Counties of the United States, 1950 and 1959, U. S. Department of Agriculture, Statistical Bulletin No. 321, Economic Research (Washington: Government Printing Office, 1962), p. 51.

These indexes quoted above do point out the combined growth of all economic variables in Lawrence County over the 1950-1959 period; for the level-of-living of farm operators could not increase very much without increased employment and income.

A level-of-living score was taken in Lawrence County by survey in 1956 and again in 1963. The Sewell system of deriving level-of-living scores was used. Items included were types of house construction, room-person ratio, water piped into house, food freezers, televisions, telephones, automobiles, newspapers and magazines, and education levels.

Part-time farmers had the highest level-of-living score in 1963, as they did in 1956 (Table XXIV). The income data presented earlier indicated that part-time farmers had the highest average income. But it is interesting to note that full-time farmers had the largest percentage increase over the 1956-1963 period. Evidently, part-time farmers were better off comparatively in 1956 than they were in 1963. Non-farm workers showed a 10 per cent increase in their level-of-living score over the period. The unemployed and retired both showed increases in their level-of-living scores over the 1956-1963 period.

V. ATTITUDE TOWARD NEW INDUSTRY

In the 1958 and in the 1963 surveys the people interviewed were asked, "Do you think new factories have been good for the farmers?" Approximately 75 per cent of 285 rural people interviewed in 1958 reported that factories had been good for the farmers (Table XXV). Naturally, part-time farmers and non-farm workers saw industrial

TABLE XXIV

LEVEL-OF-LIVING SCORES FOR RURAL RESIDENTS
LAWRENCE COUNTY
1956 AND 1963

Head of Households	Level-of-Living Scores		Change
	1956	1963	1956-1963
Full-time Farmer	59	67	8
Part-time Farmer	64	70	6
Non-farm Worker	63	69	6
Unemployed	54	58	4
Retired	58	62	4
Disabled	50	64	14

TABLE XXV

ATTITUDE OF RURAL RESIDENTS IN LAWRENCE COUNTY TOWARD INDUSTRIAL DEVELOPMENT IN 1958

Response*	Total No. of People		Full-time Farmers		Part-time Farmers		Non-Farm Workers		Unemployed		Retired		Disabled	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	285	75	61	68	99	81	81	77	9	60	32	76	3	43
No	51	13	15	17	14	12	12	11	3	20	6	14	1	14
No Response	45	12	13	14	9	7	13	12	3	20	4	10	3	43
Totals	381		89		122		106		15		42		7	

*Response to the question "Do you think factories have been good for the farmer?"

development more favorably than full-time farmers. Close to 81 per cent of all part-time farmers said new factories were good for the farmers while 68 per cent of all full-time farmers reported that new factories had been good for Lawrence County's farmers.

Of those giving comments relating to what good new factories were for farmers, 37 per cent reported that more jobs were available for farmers and their wives, giving one member of the family an opportunity to work off the farm and increase the family income. Approximately 11 per cent said that farmers benefited from new industry because of the market developed for farm products. Another 5 per cent said new factories increased the value of land.

These answers are only personal beliefs and as such simply reflect the attitude of the rural population toward industrial development. Even though they may not have seen the long run effects of new investment, they could see the immediate benefit of new jobs and higher wages. The concensus of the rural population at the time the survey was made was clearly favorable.

VI. NEW INDUSTRY: A PROBLEM

New industry does not help everyone. Some of the good results of industrial development, that is, employment and income increases, have already been discussed. But there remain some problems created by industrial development that must be considered in order to give a true picture of the impact of new industry on a rural community.

The impact of industrial development on farm wages was discussed earlier but is mentioned here again to point out some farm problems created. When wage rates increase, farmers have to adjust if they are to use the most profitable combination of land, labor, and capital. Usually higher wage rates will increase the capital-intensity of production. More capital would probably increase the need for a larger farm. And it has already been shown how larger farms do not come easy around industrial areas. The price and value of land are bid up by competition for the land. So, higher farm wage rates start a reaction which can only lead to a farm adjustment problem.

Industrial development may also cause a problem for some businesses because of sales redistribution. Beginning in 1957 Lawrence County farmers began to put a larger portion of their cotton, wheat, and tobacco allotments into the Soil Bank. This precipitous drop in crop acreage resulted in serious secondary effects upon local farm service businesses. For example, a leading tractor agency reported a 50 per cent decrease in tractor sales from 1955-1956 to 1957-1958. Meanwhile, some fellow merchants were enjoying a booming business in automobiles, home appliances, and building materials.

It seems that economic growth is not completely cost-free. Some people must pay the price. These losses are the unavoidable costs of progress. Some economists say that these problems can be lessened or even solved by private and public action.

To summarize this chapter on the impact of industrial development upon agriculture, points will be restated. There were considerable changes in farms and types of farming over the period under study. Total land in farms declined 15.8 per cent from 1954 to 1959. The number of farms decreased in the County from 3,154 in 1954 to 2,438 in 1959, a 22.3 per cent decrease. All agricultural uses of land, with the exception of cropland not harvested, decreased over the 1954-1959 period. Field crops made up the largest percentage of the decrease in total farm acreage over the period. The number of livestock farms increased over the period. The average size of farms in Lawrence County rose from 95.1 acres in 1954 to 105.6 acres in 1959, a 12.2 per cent increase.

It was concluded that the impact of industrial development influenced farm tenure and the use of inputs on the farm. The per cent of farms in Lawrence County operated by tenants decreased 10.4 per cent over the 1954-1959 period. The per cent of owners increased slightly and the per cent of part-owners increased during the same time period. Farm labor decreased while the farm wage rate increased. Capital expenditures increased for the total of all farmers. The trend was toward more capital-intensity methods of producing goods with less use of labor.

The employment of the rural farm population changed considerably over the period under study. In 1950, 77.0 per cent of the employed rural population were employed in agriculture compared to 40 per cent in 1960. Over the period, agricultural employment dropped from first to third.

While total farm income decreased for the County, average family farm income increased. At the same time the farm operator level-of-living index increased for the County.

Though most of the effects of economic growth were considered to benefit the County and the farm, there were some problems created. Some businesses suffered the effects of sales redistribution because of the decline in crop acreage, and farmers were forced to readjust because of higher wage rates created by the increased demand for labor. But, despite these shortcomings, a majority of the rural residents were clearly in favor of the economic growth.

CHAPTER IV

IMPACT OF INDUSTRIAL DEVELOPMENT ON LOCAL GOVERNMENT

The county government and the Lawrenceburg city government were the governmental units considered in this analysis. The main objective was to show the impact of industrial development within the city of Lawrenceburg and the effects within the County caused by the economic adjustments accompanying industrial developments in the County.

Several changes in governmental units may occur because of industrial development. But these changes do not occur systematically to every industrial change. Local governments are similar to private firms in their reaction patterns. They react to the same stimulus, but they may react differently. Governmental units are subject to diseconomy and economy of scale effects. Governmental units with different cost structures and varying wants and needs add up to different units. That is the reason all units of government do not react in the same manner.

I. RECEIPTS AND DISBURSEMENTS

There was a considerable increase in receipts and disbursements in Lawrence County over the 1954-1963 period, with the largest increase coming after 1960. There was a noticeable increase in county receipts from 1956 to 1957. Disbursements were greater than receipts in 1956, 1959, and 1963 (Table XXVI). During all these periods a large portion of the county receipts came from state aid. For example, per capita

TABLE XXVI

RECEIPTS AND DISBURSEMENTS FOR LAWRENCE COUNTY
1954-1963

Year	Receipts	Disbursements	Excess (Deficit)
1954	$1,511,910	$1,441,761	$70,149
1955	1,630,954	1,604,015	26,939
1956	1,639,701	1,708,653	(68,952)
1957	1,871,604	1,844,604	27,000
1958	1,862,645	1,779,468	83,177
1959	1,699,301	1,733,243	(33,942)
1960	1,864,272	1,815,419	48,853
1961	2,246,192	2,196,544	49,648
1962	2,528,112	2,437,669	90,443
1963	2,048,243	2,057,363	(9,120)

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report Nos. 122,127, 139, 153, 156 (Nashville: Tennessee Taxpayers Association, 1957, 1958, 1960, 1963, 1964), pp. 46, 46, 34, 42, and 36, respectively.

state aid to Lawrence County was $55.99 in 1963, ranking sixty-fourth among all counties in Tennessee arranged in descending order of per capita state aid received by all counties. State aid made up 66.7 per cent of total receipts in Lawrence County in 1956 and 70.8 per cent of total receipts in 1963. State aid made up 26.7 per cent of total receipts in Lawrenceburg in 1956 compared to 23.8 per cent in 1963.

In 1956 Lawrence County ranked high, among all counties in the State, in state aid that exceeded total local property taxes with 168 per cent. In 1963, the per cent figure was only 117 per cent. Per capita state aid exceeded per capita taxes levied in Lawrence County by only $30.13 in 1963. Since 1956 this amount has been decreasing constantly; a sign that Lawrence County has been growing economically and is reaching a stage where the County, unlike some other rural counties, is becoming less dependent on larger counties for economic aid.

Lawrenceburg showed a much larger percentage increase in both receipts and disbursements over the 1955-1963 period than Lawrence County (Table XXVII). Disbursements exceeded receipts in 1958, 1959, and 1962. Receipts actually declined in Lawrenceburg between 1956 and 1957 while disbursements remained about constant.

II. OPERATING EXPENSES

The cost of operating the various functions of local government in Tennessee is increasing every year. State figures indicate that local governments are averaging about a 7 per cent increase in expenditures every year. The analysis of expenditures of all Tennessee county governments for fiscal 1956 shows that $93.3 millions or 58 per cent was

TABLE XXVII

RECEIPTS AND DISBURSEMENTS FOR LAWRENCEBURG, 1955-1963

Year	Receipts	Disbursements	Excess (Deficit)
1955	$174,464	$173,203	$ 1,261
1956	240,106	226,406	13,700
1957	223,490	226,340	2,640
1958	266,842	269,891	(3,049)
1959	279,570	297,589	(18,019
1960	299,426	290,144	9,282
1961	324,127	323,019	1,108
1962	349,374	373,522	(24,148)
1963	427,221	382,109	45,112

Source: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report Nos. 122, 127, 139, 153, 156 (Nashville: Tennessee Taxpayers Association, 1957, 1958, 1960, 1963, 1964), pp. 76, 76, 63, 71, and 66, respectively.

expended for the operation of county public school systems. By 1963 public school expenditures had climbed to $150.2 millions, which was still 58 per cent of total expenditures (Table XXVIII). As in most other counties, public schools accounted for the largest item of expense in Lawrence County, 50 per cent in 1956 and 58.5 per cent in 1963.

III. DEBT

The debt of Lawrence County, as well as most counties, was increasing at a steady rate. But the increase in total and net bonded debts have not been as large in Lawrence County as they have been in all counties in Tennessee from 1956 to 1963. Lawrence County had a 38 per cent increase in total bonded debt over the 1956-1963 period while all counties had an 80 per cent increase in total bonded debt and 87 per cent increase in net bonded debt. The increase in per capita debt, both total and net, for Lawrence County was also considerably less than that for the total of all counties in Tennessee. These debts just quoted belong to one of the two general types of Industrial Building Bonds: General Obligation Bonds. The other type is Revenue Bonds. General Obligation Bonds are solely the obligation of the local government involved. The principal and interest is usually paid by the rent from the local industry concerned, but it is not pledged. Revenue Bonds are not a direct obligation of the municipality or county. The revenues or rents of the respective systems are pledged to principal and interest payments. Since the Revenue Bonds are not a direct responsibility of the government, they are not included in the total and net figures above. The difference between

TABLE XXVIII

OPERATING EXPENSES FOR LAWRENCE COUNTY AND TENNESSEE, 1956 AND 1963

Type Expense	1956		1963	
	Amount	% of total	Amount	% of total
Lawrence County				
General County Purposes	$ 104,662	6.1	$ 170,901	8.3
Public Schools	853,794	50.0	1,202,934	58.5
Roads and Bridges	223,075	13.1	410,151	19.9
Debt-Service	291,808	17.1	215,024	10.4
Health and Welfare	232,619	13.6	57,116	2.8
Other	2,695	.2	1,237	.1
Total Operating Expenses	1,708,653		2,057,363	
All Counties				
General County Purposes	$19,700,000	12.3	$ 34,656,075	13.3
Public Schools	93,300,000	58.2	150,263,904	58.1
Roads and Bridges	25,700,000	16.0	36,825,954	14.6
Debt-Service	16,000,000	10.0	30,711,740	11.8
Health and Welfare	-	-	5,070,014	2.0
Other*	5,600,000	3.5	1,000,576	.4
Total Operating Expenses	160,294,207		258,528,263	

*Includes Health and Welfare in 1956.

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 38; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 48.

the total bonded debt and the net bonded debt amounts to the sinking funds available plus any other appropriations.

Lawrenceburg's total bonded debt increased from $924,000 in 1956 to $1,650,000 in 1963, a 79 per cent increase (Table XXIX). But net bonded debt decreased 7 per cent during the same time period.

It is interesting to note that Lawrence County did not issue any funding or refunding bonds from 1956 to 1963. Generally, funding bonds are the result of poor fiscal management and inadequate budgetary control. These bonds are used mostly to liquidate notes. Refunding bonds are usually issued when bonds mature and no provisions have been made to pay them. There is one exception to this action though. It is sometimes possible to call outstanding bonds and re-issue them at a lower interest rate. Counties in Tennessee issued $29.4 millions of funding and refunding bonds in 1956 and $18.4 millions in 1963. Lawrenceburg did issue funding and refunding bonds in 1956. Funding bonds issued ammounted to $167,000 and refunding bonds amounted to $23,000. In 1963 the city issued $236,000 funding bonds and no refunding bonds.[1]

Public schools made up the bulk of the bonded debt in Lawrence County, as well as for all counties in Tennessee. Total bonded debt increased at a faster rate for all counties than for Lawrence County, the same as was true of county expenditures. The impact of industrial

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[1] Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 80; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 91.

TABLE XXIX

TOTAL GROSS, NET, AND PER CAPITA DEBTS FOR LAWRENCEBURG, LAWRENCE COUNTY, AND ALL COUNTIES (TOTALED), 1956 AND 1963

Year	Total Bonded Debt	Net Bonded Debt	Per Capita Total Debt	Per Capita Net Debt
Lawrence County				
1956	$ 1,726,000	$ 1,587,109	$59.89	$55.07
1963	2,382,000	2,188,765	80.92	78.82
Change 1956-1963				
dollar	656,000	599,656	21.03	23.75
per cent	38.0	37.8	35.1	43.1
All Counties				
1956	$188,055,732	$174,670,595	$57.13	$53.75
1963	339,393,082	326,488,035	95.15	92.54
Change 1956-1963				
dollar	151,337,350	151,817,440	38.02	38.79
per cent	80.5	86.9	66.5	72.2
Lawrenceburg				
1956	$ 924,000	$ 248,793	$146.67*	$39.49*
1963	1,650,000	232,391	194.12*	27.34*
Change 1956-1963				
dollar	726,000	- 16,402	47.45	-12.15
per cent	78.6	-6.6	32.4	-30.8

*Estimated.

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), pp. 42, 43, and 73; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), pp. 52, 53, and 83.

development upon bonded debt for the County was exerted unevenly among purposes for which bonds were issued (Table XXX). Bonds sold for school purposes were affected to a greater degree, due to the greater demand for school services created by better economic conditions.

Unlike Lawrence County, Lawrenceburg issues the major portion of its bonds for public improvements and city-owned utilities rather than for schools (Table XXXI). Lawrenceburg increased its General Obligation Bonded debt 79 per cent from 1956 to 1963. The increase for Lawrenceburg was much larger than that for the County.

IV. PROPERTY TAXES

It was mentioned earlier that civic leaders may have dual goals in establishing new industry. One goal may be to increase employment, income, and level-of-living for the residents of the county. The other goal, and the one discussed here, may be to increase the property tax base for the county and city.

Unless there is an increase in wealth, the existing property tax may become burdened with increased taxes. The only way an area can increase its property tax receipts without having new property developments is to raise the tax rate or the assessment rate. And some counties in Tennessee have been doing just that. The counties increased their property tax load 134 per cent over the 1954-1963 period while the cities increased their property taxes by 70 per cent. Many of the county increases of the last several years can be attributed to reassessment programs.

TABLE XXX

PURPOSES FOR WHICH BONDS WERE ISSUED IN LAWRENCE COUNTY AND ALL COUNTIES (TOTAL), 1956 AND 1963

Year	Roads & Bridges	Schools	Hospitals	Total All Purposes
Lawrence County				
1956	$ 350,000	$ 1,181,000	$ 195,000	$ 1,726,000
1963	455,000	1,672,000	255,000	2,382,000
Change 1956-1963				
dollars	105,000	491,000	60,000	656,000
per cent	30.0	41.6	30.8	38.0
Total All Counties				
1956	$ 19,906,211	$120,613,900	$ 9,523,000	$188,055,732
1963	17,048,334	243,241,700	15,463,000	339,393,082
Change 1956-1963				
dollars	-2,857,877	122,627,800	5,940,000	151,337,350
per cent	-14.4	101.7	62.4	80.5

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), pp. 45 and 46; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), pp. 54 and 55.

TABLE XXXI

PURPOSES FOR WHICH LAWRENCEBURG CITY BONDS WERE ISSUED,
1956 AND 1963

Year	Streets	Utilities	Other Improvements	Funding	Refunding	Total
1956	$95,000	$ 634,000	$5,000	$167,000	$23,000	$ 924,000
1963	62,000	1,352,000	0	236,000	0	1,650,000
Change 1956-1963						
dollars	-33,000	718,000	-5,000	69,000	-23,000	726,000
per cent	-34.7	113.2	-100.0	41.3	-100.0	78.6

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 79; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 92.

Over the 1955-1962 period Lawrence County did not increase its property tax levied as much as all counties did (Table XXXII). Lawrence County levied and collected $383,683 from property taxes in 1955 and $622,477 in 1962, which amounted to a 62 per cent increase over the period. This increase in the tax assessment was due largely to economic growth because the assessed value percentage of actual value decreased from 30 per cent in 1955 to 18 per cent in 1964 and the tax rate per $100 valuation increased only $0.55 over the period. Of the total increase in taxes collected ($238,794), approximately 15 per cent can be attributed to the tax rate increase. The remaining 85 per cent can be attributed to economic growth. The increase in taxes collected in Lawrenceburg can be attributed solely to economic growth because the per cent assessment of actual value decreased and the tax rate remained constant from 1956 to 1963. All counties as a total had a 79 per cent increase in property taxes levied and collected during the same period. Of the $51,756,315 increase in collections, approximately 48 per cent can be attributed to tax and assessment increases and 52 per cent to economic growth.

No change occurred in the Lawrenceburg nominal county tax between 1953 and 1962, but the Lawrence County tax rate did increase 37 per cent between 1954 to 1963 (Table XXXIII). The county tax rate was $2.84 in 1954 and $3.85 in 1963. The State median tax rate increased from $3.00 per hundred dollars assessed value in 1954 to $3.80 in 1963, an increase of 27 per cent over the period.

Total property assessment in the County increased 37 per cent over the 1953-1962 period compared with a 93 per cent increase in Lawrenceburg (Table XXXIV). Per capita assessment followed that of total assessment

TABLE XXXII

PROPERTY TAXES LEVIED AND COLLECTED IN LAWRENCE COUNTY, ALL COUNTIES, AND LAWRENCEBURG, 1955 AND 1962

Area	Taxes Levied		Change		Per cent Change Due to	
	1955	1962	$	%	Tax rate increase	Economic growth
Lawrence County	$ 383,683*	$ 622,477*	$ 238,794	62	15%**	85%**
All Counties	65,622,065	117,378,380	51,756,315	79	48%	52%
Lawrenceburg	51,957	95,644	43,687	84	0%	100%

*1955 taxes levied at 30% assessed values at rate of $2.84 per $100;
1962 taxes levied at 18% assessed values at rate of $3.39 per $100.

**Figured on basis of $653,778 of levied taxes in 1962 due to economic growth and tax rate increase since the decrease in % assessment caused a difference of $414,984 from 1955 to 1962.

Source: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156, (Nashville: Tennessee Taxpayers Association, 1964), p. 30; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 39.

TABLE XXXIII

TAX RATES FOR LAWRENCE COUNTY AND LAWRENCEBURG WITH STATE MEDIAN, 1954-1963 AND 1953-1962

Area	Tax Rates (Per $100 assessed valuation)										
	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Lawrence County		$2.84	$2.84	$2.88	$2.88	$2.88	$3.05	$3.05	$3.39	$3.39	$3.85
Lawrenceburg	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	
State Median		$3.00	$3.04	$3.15	$3.20	$3.30	$3.59	$3.60	$3.75	$3.85	$3.80

Source: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 32; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 40.

TABLE XXXIV

COMPARISON OF ASSESSED VALUES OF TAXABLE PROPERTY IN LAWRENCE COUNTY AND LAWRENCEBURG, 1953 AND 1962

Area	1953		1962		Per cent Change 1953-1962	
	Total Assessment	Per Capita Assessment	Total Assessment	Per Capita Assessment	Total	Per Capita
Lawrence County	$ 13,385,210	$475	$ 18,362,158	$658	37	39
Lawrenceburg	3,307,394	601	6,376,294	750	93	25
All Counties	2,602,137,296	698	4,018,959,273	1104	54	59
All Cities	1,502,379,070	1169	2,458,023,928	1616	64	38

Source: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 28; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 36.

in the County, but per capita assessment in Lawrenceburg increased much less than total assessment due to the population increase in Lawrenceburg.

Evidently Lawrenceburg has not followed the property tax trends set by other cities and towns in Tennessee. These cities, unlike the counties, have been able to finance a greater portion of their operations from revenue other than the property tax. As an example, the city property tax provided 45 per cent of the revenue needed in 1952 and only 31 per cent of the needed revenue in 1962. The Lawrenceburg city property tax provided 26 per cent of the revenue needed in 1962.

V. STATE AID

State aid to Lawrence County has increased since 1956, but not at the same rate state aid has increased to all Tennessee counties (Table XXXV). The total amount of state aid distributed to Lawrence County in 1956 was $1,093,621; the amount in 1963 was $1,450,260. The per cent increase in state aid distributed to Lawrence County was 32.6 per cent compared with 41.7 per cent increase for all Tennessee counties. It is interesting to note that the per cent increase of state aid for each type of expenditure was less for Lawrence County than all the counties.

These data indicate that the local governments are still depending a great deal on the State for the bulk of their income. However, this is not true for all counties. Nine counties are still paying more money to the State than they are getting back. These nine counties are considered the larger counties. Lawrence County ranks sixty-sixth from the top of all Tennessee counties in per capita state aid with an average of

TABLE XXXV

ANALYSIS OF STATE AID DISTRIBUTED TO LAWRENCE COUNTY AND ALL COUNTIES (TOTALED) FOR THE FISCAL YEARS 1956 AND 1963

County	Public Schools			Roads			Alcoholic Beverage Tax	Other	Total State Aid
	Operations	Capital Outlay	Total for Schools	2¢ Gasoline Tax	Rural Roads	Total for Roads			
Lawrence									
1956	$643,633	$91,340	$734,973	$205,463	$131,192	$336,655	$18,675	$3,318	$1,093,621
1963	882,385	91,340	973,725	268,318	183,613	451,931	19,532	5,072	1,450,260
Change:									
Dollar	238,752	0	238,752	62,855	52,421	115,276	857	1,754	356,639
Per cent	37	0	33	31	40	34	5	53	33
All Counties (Totaled)				(In Thousands)					
1956	$ 49,278	$ 5,869	$ 55,147	$ 18,339	$ 9,770	$ 28,109	$ 1,823	$ 640	$ 85,718
1963	73,052	6,366	79,418	24,435	14,616	39,051	2,045	988	121,501
Change:									
Dollar	23,774	497	24,271	6,096	4,486	10,942	222	348	35,783
Per cent	48	9	44	33	50	39	12	54	42

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), p. 50; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), p. 40.

$54.03. The statewide average per capita state aid was $48.41 in 1962. The statewide average for rural counties alone would be much higher since the wealthier counties lower the statewide average.[2]

State aid distributed to Lawrenceburg increased at a faster rate than aid distributed to all Tennessee cities (Table XXXVI). The State distributed $64,055 to Lawrenceburg in 1956 and $101,913 in 1963. The increase in state aid to Lawrenceburg was 59 per cent compared to an increase of 43 per cent for all cities in the State as a whole.

To summarize the impact of industrial development on government financing, it seems clear that there has been some impact and the impact was unevenly exerted. The movement of rural population to Lawrenceburg concentrated the demand for services, and expenditures increased. The County, with rural population decreasing, found it necessary to increase its property tax rate while Lawrenceburg did not increase its tax rate. However, tax receipts did increase in Lawrenceburg because of a growth in tax base due largely to industrial development. Because of the increased wealth in Lawrence County, the County did not follow the debt pattern set by other counties. Per capita net debt increased less in Lawrence County than in the total of all counties. The per capita net debt in Lawrenceburg actually declined over the 1956-1963 period. Lawrence County was less of a state burden in 1963 than in 1956. State aid increased to Lawrence County over the period but at a smaller rate than for the majority of the other counties.

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[2]Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 153 (Nashville: Tennessee Taxpayers Association, 1963), p. 13.

TABLE XXXVI

STATE AID DISTRIBUTED TO LAWRENCEBURG AND ALL TENNESSEE CITIES, 1956 AND 1963

City or Town	Gasoline Motor Fuel Tax	Sales Tax	Income Tax	Beer and Alcohol Tax	Total State Aid
Lawrenceburg					
1956	$ 33,791	$ 27,218	$ 1,984	$ 1,062	$ 64,055
1963	53,588	44,048	2,651	1,626	101,913
Change 1956-1963					
dollar	19,797	16,830	667	564	37,858
per cent	58.6	61.8	33.6	53.1	59.1
All Cities					
1956	$ 9,169,315	$ 7,420,713	$ 830,628	$287,429	$36,591,072
1963	12,217,377	10,105,479	1,477,113	373,233	52,286,166
Change 1956-1963					
dollar	3,048,062	2,684,766	646,485	85,804	15,695,094
per cent	33.2	36.2	77.8	29.9	42.9

Sources: Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 156 (Nashville: Tennessee Taxpayers Association, 1964), pp. 70 and 72; and Tennessee Taxpayers Association, County City and Town Government in Tennessee, Research Report No. 122 (Nashville: Tennessee Taxpayers Association, 1957), pp. 80 and 82.

CHAPTER V

SUMMARY AND CONCLUSIONS

The hypothesis that industrial development is effective in accelerating economic growth of a rural community was supported by the data found. Lawrence County's growth before 1956 depended largely on the economic conditions of the State and surrounding counties. But after 1956 the County did not follow the growth trends set by the larger economies; but instead, Lawrence County set its own pattern in economic growth. The national prosperity helped Lawrence County.

Some important trends in Lawrence County's economy were revealed by this study. The analysis of the data indicated the possibility that economic growth in the County has slowed down since 1959. Economic growth is a flow process and one lump-sum investment will not assure continual economic growth. The impact of an initial investment will eventually wear itself out, halting the growth pattern and the rates of increase in economic variables. In order to have steady economic growth, an area must plan for regular inflows of investment.

Employment gains were noticeable but not sufficient. Lawrence County did not have the necessary employment growth from 1956 to 1963 to employ all the workers who left the farms. The unemployment rate did not decline. Thus, from the outside picture, Lawrence County did have a considerable increase in industrial employment; but from the inside, that growth was less than needed to assure full employment.

Local policy makers might also be concerned with "leakages" that work to dampen the impact of industrial development. There are many types of leakages that might substantially reduce the level of economic benefits accruing to the local residents. A manufacturing plant that employs a considerable number of out-of-county commuters is subsidizing the economic growth of another community at the expense of the local community or county. Income is lost to the county and all businesses may suffer lost sales.

The analysis in this study suggests that the county might not be the ideal economic planning area. The data indicate that the impact of industrial development is diffused to surrounding counties. Probably, no one area size would be ideal for every region. Such estimates of the "right" area size would depend on quantity and quality of connecting highways, level of industrial development, population size, level of unemployment, and area economic policy. Some studies have concluded that areas up to one hundred and two hundred miles in radius in some places might be the ideal area size. Local leaders and officials should study the possibilities of working with their neighbors in seeking greater economic growth.

The low employment multiplier derived in Lawrence County tends to indicate, as one possibility, that service trades operate at less than full capacity. In labor surplus-rural areas, the presence of excess labor and idle business capacity reduces the size of the multiplier below that expected in more rapidly growing areas. Generally, excess capacity in the service industry can be expected in areas characterized

by high rates of unemployment and static or slow declining populations.[1]

An important trend in total retail sales should concern retail businesses in Lawrence County, specifically Lawrenceburg. Because of widening competition, Lawrenceburg's retail businesses are losing retail trade to surrounding areas. The basis for this claim lies in the fact that per capita retail sales in the County have not increased at the rate per capita personal incomes have increased since 1956. The difference between the two trends has become more prominent since 1959. This loss in sales represents a direct leakage to surrounding areas. The result is that the impact of industrial development on economic growth is weakened.

The economic growth in the County did increase the welfare of a good number of the County residents. The welfare of different groups was affected in varying proportions. Those people employed by the factory were aided directly. Farmers were aided indirectly by the growth by the drawing of surplus population and near idle farmers off the farm and into industrial employment. This left the remaining farmers in a better economic position because it lowered the number of farmers contributing to the total farm supply from that area. A larger share of the total income going to agricultural production went to each farmer. In general, the welfare of the County increased because the expanded economic growth enabled the County to increase tax receipts to meet the growing demands

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[1] H. A. Wadsworth and J. M. Conrad, "Leakages Reducing Employment and Income Multipliers in Labor-Surplus Rural Areas" (A paper presented at the AFE meetings in Stillwater, Oklahoma, August, 1965).

for public services without increasing the burden on existing property.

Industrial development can also create problems in the provision of governmental services. As the population increases because of industrial development, more and better public services are demanded. And it is better if the plans are made in expectation of these needs. Many industrial regions have developed overnight without any formal planning. These regions are usually inefficient in providing public services.

The analysis of governmental activities over the 1956-1963 period suggests that both County and City governments have been efficient in providing governmental services and facilities; nevertheless, per capita cost of providing these services and facilities increased from 1956 to 1963. Both City and County governments showed strong financial policy by their limited use of funding and refunding bonds over the 1956-1963 period. It is quite clear that growth provided an expanded tax base which added strength to the financial position of the local government.

This analysis did support the thesis that investment is the key variable in economic growth. Questions concerning at what rate investment should occur or the exact measurement of the impact of investment have remained unanswered. In addition, many economic relationships have been left unanswered. The social conflicts that sometime occur in industrial development--such as labor and management conflicts, and so forth--must be analyzed with models other than economic models.

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