



COMMONWEALTH OF KENTUCKY
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SUBJECT: Research Report No. 447; "The Socioeconomic Impact of the Mountain Parkway
and KY 15;" KYP-73-42; HPR-PL-1(11), Part III-B

One needs only to look at the 1929 Highway Map of Kentucky (included herein) to realize that the Mountain Parkway was the first, second-generation, paved highway into or out of Eastern Kentucky. The economic impact of the first-generation highway system has not been quantified. Highways replaced railroads, and the consolidating of schools created a demand for school-bus roads to every residence. Many country stores were no longer needed; and REA supplanted the gasoline-engine-powered washing machine.

Although the Mountain Parkway was dubbed "a developmental highway" at its very conception, it was apparent then that the effects would have to be so outstanding as to be self-evident or else remain confounded and diffused with other effects -- that is to say, ... remain unidentifiable and (or) not quantifiable. Nevertheless, it was a very singular experiment and dutifully warrants before-and-after surveys and analyses. The Daniel Boone Parkway and the recently planned extension of KY 80 to Watergap will likely have further, compounding but more obscure aftereffects. The Appalachian System is also providing second-generation highways which are intended to be developmental -- that is, in only a slightly different sense and on a grander scale. The economic growth center developmental highway projects at Barbourville and Campbellsville are rather nominal in comparison to the aforementioned programs.

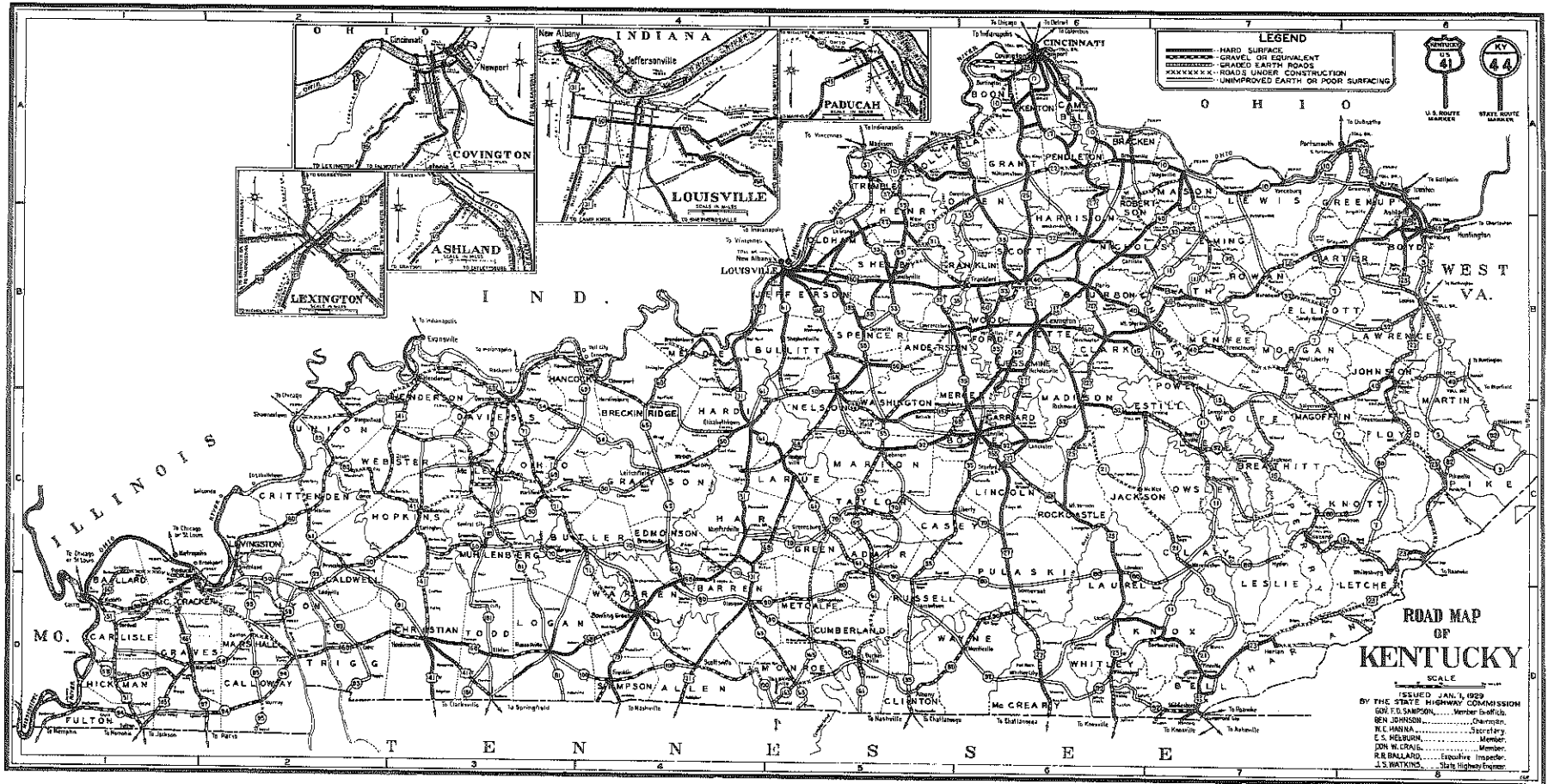
The report enclosed presents rather exhaustive survey information and analyses. The work in no way implies discovery of new or more powerful economic indicators or measures; rather the inadequacy of some measures is made more evident.

Respectfully submitted,

Jas. H. Havens
Director of Research

JHH:gd
Enclosures
cc's: Research Committee

Highway Map of Kentucky



Technical Report Documentation Page

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16. Abstract <p>A study of socioeconomic variables in a nine-county region in Eastern Kentucky was undertaken to determine whether significant growth had occurred since the opening of the Mountain Parkway and reconstruction of KY 15. It was hypothesized that these roads have acted as catalysts with available resources to promote a better quality of life.</p> <p>Study revealed that, while income levels and business sales have enjoyed substantial increases, overall quality of life is still poor. Educational facilities are inadequate; economic diversification in business types is limited; coal is still the main stimulant for income and employment. However, outmigration of persons from the area has been reversed simply because economic conditions are better due to the reemergence of coal.</p> <p>Since the return of coal as a more important energy resource for the nation has only occurred recently, the full impact of the energy crisis and better highways has yet to be seen in regard to socio-economic stimulation of this traditionally depressed region.</p>					
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Research Report
447

**THE SOCIOECONOMIC IMPACT OF THE MOUNTAIN
PARKWAY AND KY 15**

KYP-73-42, HPR-PL-1(11), Part III-B

by
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The contents of this report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not reflect the official views or policies of the Kentucky Bureau of Highways. This report does not constitute a standard, specification, or regulation.

May 1976

INTRODUCTION

The Mountain Parkway, a 43.1-mile (69.3-km) limited-access toll facility from Winchester to Campton, was completed in 1961. Two extensions of this road have since been constructed, those being a 32.4-mile (52-km) section from Campton to Salyersville (the Mountain Parkway Extension) and a 49-mile (79-km) reconstruction of KY 15 from Campton to Hazard to Whitesburg (a corridor of the Appalachian Highway System). These highways are shown in Figure 1.

The fact that toll revenues fall short of total costs has created skepticism about the system. The expected long-run recovery ratios for the Parkway and Parkway Extension are 0.67 and 0.42, respectively (see Table 1). Traffic volumes on the Parkway are relatively sparse compared to interstate roads. However, they are about average for toll roads and interstates combined. Parkway traffic is much greater than on the average toll road. Parkway Extension volumes are about equal to the average toll road volume. Volumes on KY 15, which is mostly a two-lane road, are double or triple the volume for average two-lane roads. The volumes are shown in Table 2.

Exclusion of total revenues and benefits can present a biased case against the Parkway. A major consideration in building a highway must be the potential socioeconomic development the road could facilitate. If the highway has aided the prospects for economic and social development in Eastern Kentucky, empirical evidence could have manifested itself in the form of higher incomes, greater employment, industrial progress, cultural enhancements, population stabilization, or some related indicator.

The purpose of this study was to determine the extent to which the Mountain Parkway and KY 15 have contributed to socioeconomic development in areas contiguous to these highways. Development which has occurred since completion of the roads could provide justification for their construction.

Prior Related Studies

Prior nonuser economic studies of highways at the Division of Research began in the early 1960's. Several studies were done in association with the Bureau of Business Research, University of Kentucky. A major one was "Economic Impact of Secondary Road Improvements" (1), an analysis of changing market conditions due to highway improvements in Eastern Kentucky.

"Immediate Effects of Partial Opening of I 75 on Nearby Highway Oriented Businesses" (2) was completed in September 1963. As a follow-up, "Impact of I 75 on the Local Economy between Walton and Georgetown" (3) was issued in February 1966. This

study of the impact of I 75 between Georgetown and Walton was the Division's last nonuser study until 1974, when "before" evaluations of economic growth center developmental highways were undertaken on KY 55 between Lebanon and Campbellsville (4) and US 25-E between Corbin and Barbourville (5).

Further insight into problems of the Appalachian area were gained by analysis of **Resources and People in East Kentucky; Problems and Potentials of a Lagging Economy** (6); **Appalachia - A Report by the President's Appalachian Regional Commission, 1964** (7), **The Southern Appalachian Region, and Kentucky Coal and Its Transportation Impacts** (8). Another noteworthy analysis of nonuser benefits through highways was "Economic Impact of I 71 on North Central Ohio" (9).
Methodology and Procedure

The scope of this report included Powell, Wolfe, Magoffin, Breathitt, Perry, Letcher, Knott, Menifee, and Morgan Counties. Nine of these counties are in fairly close proximity to the respective roads. Covered in the study was a chronological survey of basic economic and social indicators such as income, employment, population, and educational statistics. Data for such indicators were usually studied from about 1960 until the mid-1970's. Also included were studies of businesses along selected highways within the area plus a land value survey of interchanges and numerous random land plots throughout the different counties.

Data were collected for a socioeconomic inventory from several different sources, including Spindletop Research, the Kentucky Departments of Commerce, Education, Parks, Human Resources, Mines and Minerals, and Transportation. The United States Census of Population and the Census of Business were also used extensively in data collection.

A major quantitative section of the report deals with receipts of businesses along major highways and also with land values of both interchanges and randomly chosen plots throughout the different counties. Data for the business study were collected by personal interviews with owners and(or) managers of establishments and through assistance of the Department of Revenue in regard to taxable gross receipts. The purpose of these analyses was to determine whether the Parkway and KY 15 exhibited influence on the business climate of areas near the Parkway.



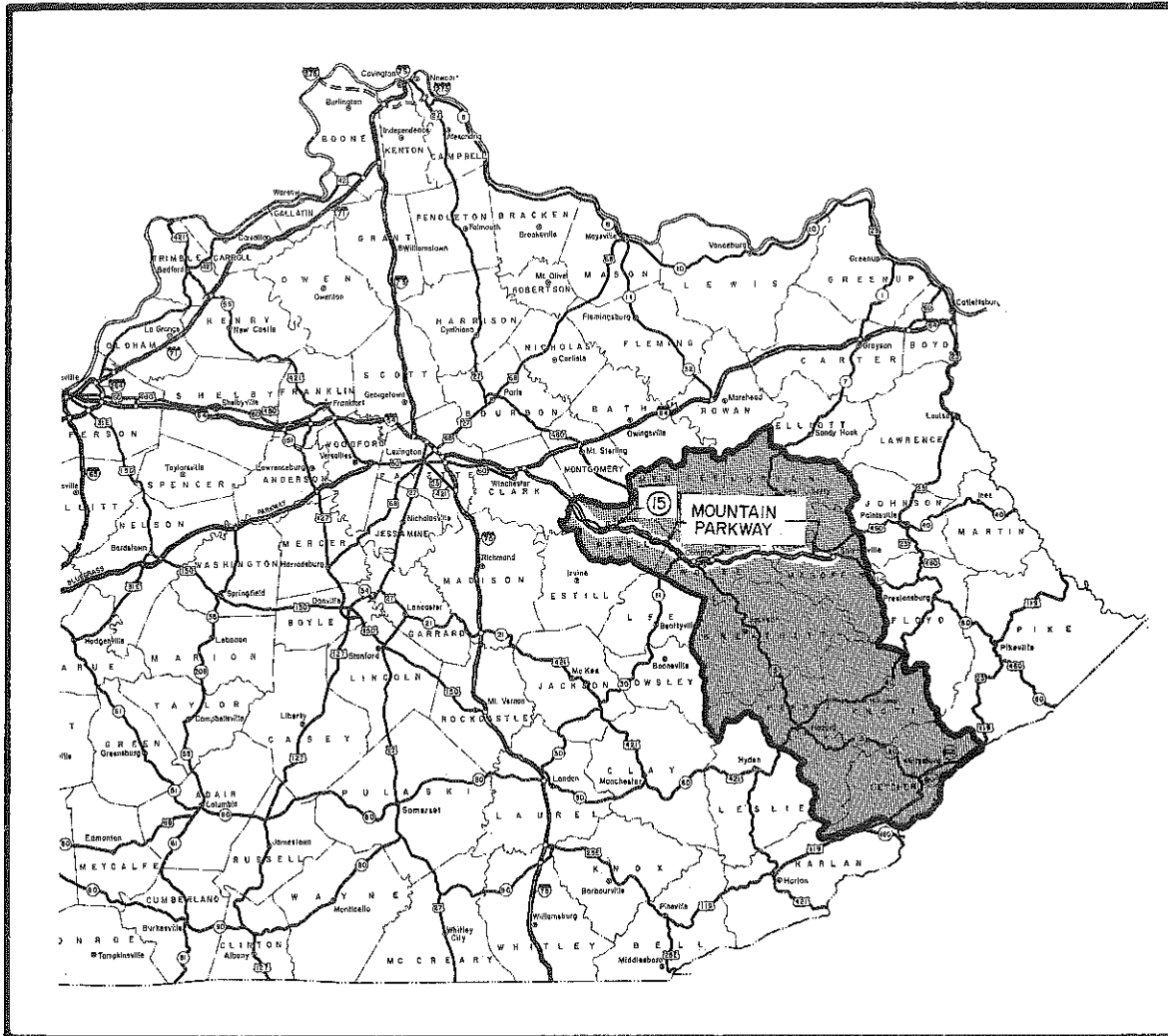


Figure 1. Mountain Parkway Study Area.

TABLE 1. ESTIMATED COSTS AND REVENUE - MOUNTAIN PARKWAY AND MOUNTAIN PARKWAY EXTENSION

	MOUNTAIN PARKWAY	MOUNTAIN PARKWAY EXTENSION
ESTIMATED COSTS		
Construction	\$ 27,878,745	\$ 17,507,200
Right of Way	1,726,000	373,200
Engineering	2,665,600	1,648,800
Administrative and Legal	297,790	187,210
Contingencies	3,202,289	2,013,166
Subtotal	35,770,424	21,729,576
Project Costs: Financing Costs, Capitalized Interest, Authority Administration, Bond Discount; Less Interest Earned on Investments	8,942,606	5,432,394
Total Estimated Costs	44,713,030	27,161,970
Highway Bureau Contribution	2,500,000	
Estimated Bond Issue	42,213,030	27,161,970
Level Debt Service (Average Annual)	2,526,019	1,520,636
Total Debt Service (Rentals) 37 Years	93,462,703	56,263,532
ESTIMATED REVENUE		
First Year Revenue	680,000	297,000
Average Annual Revenue	1,694,000	635,000
Through 1973	13,217,000	4,406,000
After 1973	49,461,000	19,089,000
Total Estimated Revenue - 37 Years	62,678,000	23,495,000
Excess Total Rental over Total Revenue	30,784,703	32,768,532
Recovery Ratio	0.67	0.42
Estimated Interest Rate Used	5.0%	4.5%

^aSource: Kentucky's Toll Road System - Summary Information, Kentucky Department of Transportation, Bureau of Highways, Division of Planning, October 1973

TABLE 2. MOUNTAIN PARKWAY AND KY 15 AVERAGE DAILY VEHICLE COUNT (1967-1974)^a

YEARS	MOUNTAIN PARKWAY	MOUNTAIN PARKWAY EXTENSION	KY 15				
			BREATHITT	KNOTT	LETCHER	PERRY	WOLFE
1967	6839	2736	1860	NA ^c	NA	2690	1840
1968	7807	2831	NA	NA	2173	NA	NA
1969	8023	2962	2262	1487	3098	3595	1880
1970	8416	3015	NA	1382	3189	NA	NA
1971	8880	3121	3067	2317	2610	3195	2044
1972	9355	3188	NA	NA	NA	NA	2296
1973	9999	3478	3612	2550	2590	3121	2501
1974	10639	3831	NA	NA	NA	NA	NA

KENTUCKY AVERAGES ^b	INTERSTATES	PARKWAYS	INTERSTATES AND PARKWAYS	TWO-LANE
1970-1972	11957	2808	7703	1036

^aSource: Kentucky Department of Transportation, Division of Planning

^b"Relationships between Roadway Geometrics and Accidents," Kenneth R. Agent, Department of Transportation, Division of Research, April 1974

^cNA: Not Available

Limitations

The study was limited to a certain extent because the full effect of the coal boom in the Parkway and KY 15 region could not be yet ascertained. Perhaps, in a decade, a more comprehensive analysis of the area should be made. Then the full impact of the transportation implications brought about by coal production could be measured. Greater socioeconomic evolution not presently foreseen could well occur by that time. Thus, the full impact of these highways is yet to be seen.

Much data on the county level are sketchy. Property valuations were not logically consistent, nor were they in many cases near a true market value for selected parcels. Local self-interests possibly accounted for some of these anomalies.

General Environment

The nine-county study area is a predominantly rural region whose basic infrastructure is not likely to change on a great scale for the remainder of the 1970's. Total land area is 1,799,936 acres (7.284 Gm²), of which 82 percent is commercial forest land and 30

percent is potential farm land. This does not, however, mean that the area is suitable for farming. Several counties which depend heavily upon coal mining are naturally lacking in farm land, for the topography is rather mountainous. These include Breathitt, Perry, Letcher, and Knott, which have 26.9, 5.1, 4.8, and 6.0 percent of land in farm land, respectively. The average farm size is about 125 acres.

Principal mineral resources include coal, petroleum, natural gas, timber, stone, clay, sandstone, sand, gravel, and limestone. Main crops and farm products are burley tobacco, corn, cattle, hogs, and milk. Average rainfall is about 41 inches (1.04 m); the mean temperature is 56 F (13 C).

Population per square mile (2.6 Mm²) is about half that of the statewide average. Educational and medical facilities are far below state and national averages in both quantity and quality. Available land for future industrial and residential use is sorely limited. For present conditions, water supplies are adequate in most cities. Sewage and water facilities are lacking in many of the rural areas.

THE APPALACHIAN PROBLEM AND ADEQUATE HIGHWAYS

Any study of the Appalachian region's development, or lack of it, must be highlighted by an analysis of the two interrelated problems of poverty and outmigration. Natives of Appalachia outmigrate obviously because of a lack of socioeconomic opportunity. When this process occurs on a massive scale, both existing and prospective businesses suffer. With removal of young adults from an area, as is usually the case with outmigration, middle-aged and elderly segments of the population remain. Three consequences arise: (1) since the departed young adults constitute the majority of potential parents, their loss leads to a drop in the birth rate, which forces a further rapid decline in population; (2) business sales drop because of reduced demand for all types of goods and services; and (3) there is likely to be a decline in the skill level of the remaining population for in Appalachia the elderly represent the more undereducated and technically deficient segment of the population (10).

As bad as outmigration appears, it may in reality be both acceptable and inevitable in a long-run view of Appalachia. It is highly likely that even with a declining population, there are not enough resources in the area to provide people with the moderate prosperity most Americans enjoy today. This assumption strikes deeply at the heart of a critical matter, that being: what measures can give long-run benefits to Appalachia?

Perhaps relatively little can be done to change the poverty and apathy existing in Eastern Kentucky. Perhaps outmigration is basically an excellent indirect way of allocating in the most efficient manner the few resources the area possesses. If outmigration continues to be a way of life in Appalachia, a modern highway may merely provide an exit through which outmigration can occur. Thus, the Parkway and KY 15 can furnish an outlet for socioeconomic problems peculiar to Appalachia. Outmigration spreads Appalachia's and Eastern Kentucky's unemployment and poverty woes into other regions of the nation. In effect, excellent roads into these economically troubled areas could tend to spread Appalachia's problems over the entire nation.

On the other hand, roads such as the Mountain Parkway can frequently control and(or) subsequently halt outmigration from an area, rather than draw people away. Products, services, and recreational and cultural centers both within and outside a region become readily accessible. These enhancements in the quality of life could be brought to Appalachia through such improved highway systems as the Parkway and KY 15. The prospects that the demonstration effects of new goods and services will be economically stimulating to the region are excellent.

The recent energy crisis and subsequent coal boom in Eastern Kentucky has likewise contributed to both economic stimulation and population stabilization within the Parkway study region. A recent Appalachian Regional Commission report confirms the common belief that coal and success or failure of the Eastern Kentucky economy are inexorably tied (11). The Parkway furnishes an efficient channel through which coal may be shipped westward, while coal is stimulating employment directly. The coal boom has apparently reversed the trend of outmigration in Appalachia and Eastern Kentucky in particular. The early 1970's saw increases in the population of areas that had experienced declines for the past 30 years. Improved roads and opportunity for coal-related jobs must surely be factors taken into account by incoming inhabitants.

POPULATION

Most of Eastern Kentucky experienced a dramatic outmigration of its population from 1940 through 1970. The prime reason for this decline was an overdependence on the coal industry, which was becoming both highly mechanized and less important to the nation as a main energy source. Eastern Kentucky lacked economic diversification, a shortcoming that would have caused potentially massive unemployment if not for the outmigration process. With the decline of coal came less need for the railroads, a curtailment which also hurt employment. Manufacturing industry was practically nonexistent. Small retail general stores were the main community businesses. Mining and farming made for an almost subsistence-type economy.

In the nine-county study area, population dropped from 190,049 in 1940 to 115,683 in 1970, a substantial 39 percent loss. Particularly hard hit by outmigration were the counties of Perry (46 percent decline), Letcher (43 percent decline), and Breathitt (41 percent decline), three areas which accounted for a 49,266 inhabitant loss, or 66 percent of the total decline of 74,366. The largest percentage loss for the region came between 1950 and 1960, when a 20.5 percent drop occurred. Throughout the 30-year period from 1940 to 1970, only Powell County showed a net increase in population. This 33-person gain hardly qualifies Powell as completely escaping the outmigration process. Population statistics are shown in Table 3.

The true effect of outmigration can be computed by comparing the number of births minus deaths in the area during the period of 1940 through 1970 (Table 4). In all nine counties, births far exceed deaths, yet only one county's population rose.

TABLE 3. POPULATION -- MOUNTAIN PARKWAY AREA^a

COUNTY	1940	1950	1960	1970	NET GAIN OR LOSS	TOTAL PERCENTAGE CHANGE
Breathitt	23,946	19,964	15,490	14,221	- 9,725	-41
Knott	20,007	20,320	17,362	14,698	- 5,309	-26
Letcher	40,592	39,522	30,102	23,165	- 17,427	-43
Magoffin	17,490	13,839	11,156	10,443	- 7,047	-40
Menifee	5,691	4,798	4,276	4,050	- 1,641	-29
Morgan	16,827	13,624	11,056	10,019	- 6,808	-40
Perry	47,828	46,566	34,961	25,714	- 22,114	-46
Powell	7,671	6,812	6,674	7,704	+ 33	< 1
Wolfe	9,997	7,615	6,534	5,669	- 4,328	-43
Total	190,049	173,060	137,611	115,683	- 74,366	-39

^aSource: United States Census of Population

Table 4 shows that the greatest absolute impact on population from outmigration occurred during the 1950 - 1960 period. The net effect of migration was a loss of 60,003 from 1940 to 1950, a loss of 69,336 from 1950 to 1960, a loss of 40,395 from 1960 to 1970, and a gain of 2,917 in the 1970 to 1973 period. It appears that outmigration has been reversed in the past few years. In particular, a major turnabout was noted in Letcher County, where the net effect of migration for 1940 - 1970 was a loss of 38,585. However, the net effect produced a gain of 1,635 in the period 1970 - 1973. Actual reversal of the outmigration trend probably began in the 1960's when population was still declining but at a much slower rate than in the 1950's.

As previously mentioned, outmigration appears to rob areas of the younger working class, leaving the unskilled elderly. This phenomenon is evident in Table 5, which shows changes in selected age categories for each county, years 1950 through 1970. During this period the greatest national outmigration occurred in the Appalachian region. Every county in the study area incurred a decline in population under 18 years of age and a rise in those 65 years and over, circumstances that increased the median age very noticeably. The median age for 1950 had to be estimated because of incomplete census data. The declining birth rate may have contributed to the under 18 age group. Also, the fact that many native Appalachians return home for their years of retirement probably increased the over 65 bracket. Nevertheless, outmigration is unquestionably the major cause for the higher median age.

Outmigration has had a devastating effect on community settlement trends as well as on actual population numbers. Had the net effect of outmigration been less, both population and commercial development would likely have become much more scattered, thus making more goods and services available outside principal cities, usually county seats. Instead, commercial growth has been well clustered, usually within city limits. Outside a town, one normally finds little evidence of economic growth. The reason for this is a lack of affluent rural population. People with higher incomes center where some conveniences and services abound. In rural regions of each county, there is not enough economic or political power to stimulate business development or public services.

Assuming 1970 county borders (2,812 square miles (7.2 Gm²) for the nine counties), population per square mile (2.6 Mm²) decreased from 68 in 1940 to 41 in 1970. The Kentucky average for 1970 was 81. Since Kentucky is usually classified as a predominantly rural state, this figure gives an idea of the degree of isolation of the area. While the population per square mile (2.6 Mm²) continued to drop, the number of inhabitants of the major cities registered a minute gain (see Table 6). The clustering of population and business activity remained fairly well confined to the cities.

TABLE 4. SUMMARY OF BIRTHS, DEATHS, AND MIGRATION^a

PERIOD	COUNTY	POPULATION AT BEGINNING OF PERIOD	BIRTHS	DEATHS	BIRTHS LESS DEATHS	EXPECTED POPULATION AT END OF PERIOD	ACTUAL POPULATION AT END OF PERIOD	NET EFFECT OF MIGRATION
1940-1950	Breathitt	23,946	5,925	1,307	4,618	28,564	19,964	- 8,600
	Knott	20,007	5,982	878	5,104	25,111	20,320	- 4,791
	Letcher	40,592	13,481	3,023	10,458	51,050	39,522	- 11,528
	Magoffin	17,490	4,151	807	3,344	20,834	13,839	- 6,995
	Menifee	5,691	1,485	413	1,072	6,763	4,798	- 1,965
	Morgan	16,827	3,959	1,078	2,881	19,708	13,624	- 6,084
	Perry	47,828	15,246	2,992	12,254	60,082	46,566	- 13,516
	Powell	7,671	1,999	627	1,372	9,043	6,812	- 2,231
	Wolfe	9,997	2,704	793	1,911	11,908	7,615	- 4,293
	Total	190,049	54,932	11,918	43,014	233,063	173,060	- 60,003
1950-1960	Breathitt	19,964	4,615	1,091	5,706	25,670	15,490	- 10,180
	Knott	20,320	4,842	909	3,933	24,253	17,362	- 6,891
	Letcher	39,522	9,528	2,433	7,095	46,617	30,102	- 16,515
	Magoffin	13,839	2,792	833	1,959	15,798	11,156	- 4,642
	Menifee	4,798	1,090	450	640	5,438	4,276	- 1,162
	Morgan	13,624	3,174	1,092	2,082	15,706	11,056	- 4,650
	Perry	46,566	12,415	2,569	9,846	56,412	34,961	- 21,451
	Powell	6,812	1,787	548	1,239	8,051	6,674	- 1,377
	Wolfe	7,615	2,009	622	1,387	9,002	6,534	- 2,468
	Total	173,060	42,252	10,547	31,705	206,947	137,611	- 69,336
1960-1970	Breathitt	15,490	3,345	1,232	2,113	17,603	14,221	- 3,382
	Knott	17,362	3,432	1,078	2,354	19,717	14,698	- 5,019
	Letcher	30,102	6,016	2,411	3,605	33,707	23,165	- 10,542
	Magoffin	11,156	2,385	670	1,715	12,871	10,443	- 2,428
	Menifee	4,276	937	494	443	4,719	4,050	- 669
	Morgan	11,056	2,192	1,125	1,067	12,123	10,019	- 2,104
	Perry	34,961	8,138	2,643	5,495	40,456	25,714	- 14,742
	Powell	6,674	1,710	715	995	7,669	7,704	+35
	Wolfe	6,534	1,342	663	679	7,213	5,669	- 1,544
	Total	137,611	29,497	11,031	18,466	156,078	115,683	- 40,395
1970-1973	Breathitt	14,221	900	400	500	14,721	15,100	+ 379
	Knott	14,698	900	500	400	15,098	16,200	+ 1,102
	Letcher	23,165	1,700	900	800	23,965	25,600	+ 1,635
	Magoffin	10,443	700	200	500	10,943	10,900	- 43
	Menifee	4,050	300	200	100	4,150	4,400	+ 250
	Morgan	10,019	600	300	300	10,319	10,000	- 319
	Perry	25,714	2,200	900	1,300	27,014	27,000	- 14
	Powell	7,704	600	200	400	8,104	7,900	- 204
	Wolfe	5,669	300	200	100	5,769	5,900	+ 131
	Total	115,683	8,200	3,800	4,400	120,083	123,000	+ 2,917

^aSource: United States Census of Population; Vital Statistics Reports; Kentucky Department for Human Resources; post-1970 data from "Estimates of the Population of Kentucky Counties and Metropolitan Areas": July 1972, U. S. Department of Commerce, Bureau of the Census

TABLE 5. SELECTED AGE CATEGORIES (1950-1970)

COUNTY	1950			1960			1970		
	UNDER 18 YEARS	65 AND OVER	APPROXIMATE MEDIAN AGE	UNDER 18 YEARS	65 AND OVER	APPROXIMATE MEDIAN AGE	UNDER 18 YEARS	65 AND OVER	APPROXIMATE MEDIAN AGE
Breathitt	9580	1141	18.5	6991	1377	20.9	5846	1437	23.6
Knott	10316	894	18.0	8375	1189	19.1	5951	1437	24.0
Letcher	18887	1409	18.5	13776	2030	21.1	8763	2451	27.4
Magoffin	6634	821	18.7	5131	976	20.8	4291	1125	24.1
Menifee	2197	427	21.0	1722	543	26.2	1537	454	25.9
Morgan	5988	1024	22.0	4552	1223	25.4	3665	1299	29.6
Perry	22421	1684	19.0	16373	2277	20.2	10234	2598	25.3
Powell	3017	542	21.0	2861	611	23.5	2996	756	25.5
Wolfe	3575	551	19.0	2922	703	21.9	2167	766	27.9

TABLE 6. POPULATION OF SELECTED TOWNS

TOWN	1960	1970	PERCENT CHANGE
Jackson	1852	1887	1.9
Whitesburg	1774	1137	- 35.9
Jenkins	3202	2552	-20.3
Hindman	793	808	1.9
Salyersville	1173	1196	2.0
Frenchburg	296	467	57.8
West Liberty	1165	1387	19.1
Hazard	5958	5459	- 8.4
Stanton	753	2037	170.5
Clay City	764	983	28.7
Campton	484	419	-13.4
Total	18214	18332	0.6

Several sources of population predictions for the area were studied. Most predicted a continuing downturn in population through the year 2000. However, Spindletop Research predicted a rise in population (refer to Table 7). The trend they have predicted appears to be a logical basis on which to estimate long-run population. Every county was predicted to have a rise in population by 1980, a statistic thought impossible several years ago by most sources. If this estimate is reasonably accurate, the area will have regained its 1960 population by the year 2000.

INDUSTRIAL GROWTH AND INVESTMENT

From 1961 through 1973, there were 29 announced manufacturing developments and expansions of present plant facilities throughout the nine-county study region (see Table 8). This may appear to be a very insignificant combined total; however, the fact that manufacturing firms are locating in Eastern Kentucky is a positive step, no matter how low the total. Counties of the study area have long been regarded as pockets of ignorance and idleness, with no resources available for industrial promise. This belief has been compounded and perpetuated by the isolated situation of the communities. The Parkway and KY 15 not only allayed these beliefs to a large degree but also have indirectly promoted available resources by making them readily accessible. Businesses can now give much more consideration to the mountainous areas of Kentucky as an industrial center. However, a major constraint to factory development is the few available good industrial sites. A 1974 Kentucky Department of Commerce survey revealed that only nine sites exist throughout the study area (see Table 9). Future manufacturing employment, therefore, may not be the major component of growth it has been expected to be. Once upon a time, it was expected that heavy industry would move into Eastern Kentucky to be near the source of coal. Some investment must occur in order for new jobs and needed community services to become reality. In the past several years, the majority of investment has taken place in the coal industry. Combined with manufacturing, coal could be a stimulus for overall growth. An especially helpful type of "sweetening" to the economy would be a few major federal government installations providing steady and sustaining incomes. Further discussion is given in Appendix A.

THE IMPORTANCE OF COMMUTING

Obvious evidence of growth within the Parkway

region is around Stanton in Powell County. Population has increased from about 700 in 1960 to almost 3,000 in 1975. However, in other parts of the study area, results have been far less significant. Even in Powell County, industrial and commercial development has been limited. Gasoline stations and small grocery stores abound but relatively few manufacturing industries have located there.

A possible explanation for Stanton's development is based on the high degree of commuting into the more industrialized areas of Mt. Sterling, Winchester, and especially Lexington, cities now readily accessible through the Parkway. In other towns of the Parkway region east of Stanton the phenomenon of commuting to manufacturing jobs has been less widespread simply because few industrial plants exist. Commuting long distances to cities such as Lexington is not economically feasible for the majority of residents. Much intercounty commuting in the region may be related to mining jobs in adjacent counties. Commuting patterns of the study area for 1973 and 1960 are shown in Table 10.

Seven counties had increases in workers who commuted out of county to their work stations. Menifee and Powell had the largest increases in this category. From 1960 to 1973, the number of workers commuting out of Powell increased from 385 to 678. In terms of declining intercounty commuting, Perry County led this grouping. Those commuting to other counties to work from Perry declined from 342 to 177. Seven counties had increased totals of workers commuting from other counties into their county. None of the changes were as monumental as those involved in out-of-county commuting totals. Six counties had increases in those who commuted out of county to work and commuters who came from other counties to work. These included Breathitt, Letcher, Menifee, Morgan, Powell, and Wolfe.

In the study area, mobility could be measured by the number of registered motor vehicles. Table 11 shows the number of registered passenger cars doubled from 1960 to 1972; commercial trucks and motorcycles had even more notable increases during the same period. Farm trucks, however, declined by about 67 percent. These are highly important statistics for several reasons. First, the move to more passenger vehicles indicates some degree of affluency not previously attained. As incomes rise, consumers tend to desire luxuries of modern life, a major one being increased mobility. The notable rise in the number of registered motorcycles indicates likewise. The reason for the major decline in farm trucks and similar increase in commercial trucks gives some validity to the theory that the area should be emerging from an agrarian to a more commercial, industrialized society.

TABLE 7. PROJECTED POPULATION (THOUSANDS)^a

COUNTY	1970	1980	1990	2000
Breathitt	12.1	12.6	12.9	13.6
Knott	13.9	14.7	15.2	16.1
Letcher	23.6	24.3	24.4	25.0
Magoffin	11.2	12.9	14.8	17.2
Menifee	4.4	4.8	5.4	6.2
Morgan	11.5	12.7	14.3	16.5
Perry	28.0	29.5	30.4	32.0
Powell	8.9	12.3	16.9	22.9
Wolfe	5.1	5.4	5.6	6.1

^aSource: Spindletop Research

TABLE 8. ANNOUNCED MANUFACTURING DEVELOPMENTS AND EXPANSIONS^a

YEAR	LOCATION	BUSINESS	EXPENDITURE	EXPANSION	NEW
1961	Hazard	Live Dimensions, Inc.	not given		X
1962	None				
1963	Jackson	Kentucky Mountain Crafts, Inc.	\$ 22,500	X	
1964	Pine Ridge	Ken Wolfe, Inc.	not given		X
	Hazard	East Kentucky Beverage Co., Inc.	38,000	X	
	Letcher	Boone Boy Industries, Inc.	10,000		X
1965	West Liberty	Lycoming Shoe Co.	300,000		X
1966	Whitesburg	Letcher Upholstery and Mfg. Co.	80,000	X	
	Whitesburg	Honorbuilt Divisions	150,000		X
	Stanton	Lycoming Shoe Co.	400,000		X
	Salysersville	Parkway Enterprises, Inc.	not given		X
1967	Salysersville	Ward Manufacturing, Inc.	not given	X	
	Campton	Parkway Manufacturing Co.	not given		X
1968	Salysersville	Ward Manufacturing, Inc.	400,000	X	
	Salysersville	H. B. Sipple Brick Co.	50,000	X	
1969	Campton	Control Data Corporation	not given		X
	Whitesburg	Letcher Mfg. Co.	250,000	X	
	Hazard	Chappell's Dairy	150,000	X	
	Hazard	Newspapers, Inc.	not given		X
	Jackson	U. S. Shoe Corp.	1,300,000		X
1970	Whitesburg	Letcher Mfg. Co.	800,000	X	
	Jackson	Kentucky Construction Co.	not given		X
	Campton	Middle Kentucky River Area Development Council	100,000		X
1971	Salysersville	Continental Conveyor and Equipment Co.	not given		X
	Salysersville	Continental Conveyor	1,500,000	X	
	Stanton	H. B. Sipple Brick Co.	1,370,000	X	
1972	Salysersville	Continental Conveyor	147,000	X	
	Hazard	Hazard Block Co.	not given		X
1973	Stanton	Stanton Woodcraft Co.	45,000		X
	Salysersville	Continental Conveyor	525,000	X	

^aSource: "Kentucky Directory of Manufacturers," years 1961-1973, Kentucky Department of Commerce

TABLE 9. AVAILABLE INDUSTRIAL SITES^a

COUNTY	NUMBER OF SITES
Breathitt	1
Knott	1
Letcher	1
Magoffin	1
Menifee	0
Morgan	2
Perry	0
Powell	2
Wolfe	1

^aSource: Kentucky Department of Commerce

TABLE 10. COMMUTING PATTERNS (NUMBER OF PERSONS)^a

COUNTY	COMMUTING OUT OF		TO OR FROM COUNTY	COMMUTING INTO		RESIDE AND WORK IN COUNTY
	1960	1973		1960	1973	
Breathitt	0	8	Floyd	4	16	
	4	6	Knott	0	13	
	3	25	Lee	28	9	
	4	8	Leslie	0	0	
	0	7	Letcher	0	0	
	4	0	Magoffin	35	52	
	0	5	Morgan	0	20	
	3	0	Owsley	4	23	
	46	39	Perry	9	20	
	0	0	Pike	0	6	
	0	7	Powell	0	8	1973 - 2,330
	8	22	Wolfe	0	12	1960 - 1,870
	Total	72	91		80	179

TABLE 10. (CONTINUED)

COUNTY	COMMUTING OUT OF		TO OR FROM COUNTY	COMMUTING INTO		RESIDE AND WORK IN COUNTY
	1960	1973		1960	1973	
Perry	8	7	Bell	0	0	
	9	20	Breathitt	46	39	
	8	8	Clay	0	27	
	0	0	Floyd	0	23	
	4	12	Harlan	81	50	
	73	30	Knott	324	174	
	179	18	Leslie	98	244	
	61	69	Letcher	187	108	
	0	13	Pike	18	30	
	0	0	Lee, Virginia	0	5	1973 - 4,427
	0	0	Wise, Virginia	0	23	1960 - 5,833
Total	342	177		754	723	
Morgan	0	20	Breathitt	0	5	
	0	0	Carter	0	8	
	8	0	Elliot	3	74	
	0	14	Floyd	0	0	
	16	15	Johnson	4	6	
	0	10	Lawrence	8	10	
	12	25	Magoffin	33	19	
	4	6	Menifee	13	7	
	9	30	Rowan	7	18	1973 - 1,830
	21	11	Wolfe	9	32	1960 - 2,286
	Total	70	131		77	179
Menifee	4	6	Bath	0	7	
	0	6	Clark	5	0	
	4	32	Fayette	0	0	
	0	0	Lee	0	12	
	37	413	Montgomery	19	8	
	13	7	Morgan	4	6	
	0	26	Rowan	0	0	1973 - 417
	3	0	Wolfe	0	4	1960 - 860
Total	61	490		28	37	
Magoffin	0	28	Boyd	0	0	
	35	52	Breathitt	4	0	
	12	77	Floyd	9	16	
	20	14	Johnson	58	16	
	4	8	Knott	0	0	
	0	15	Martin	0	0	
	29	19	Morgan	12	25	1973 - 1,157
	4	0	Rowan	0	13	1960 - 1,368
Total	104	213		83	70	

TABLE 10. (CONTINUED)

COUNTY	COMMUTING OUT OF		TO OR FROM COUNTY	COMMUTING INTO		RESIDE AND WORK IN COUNTY
	1960	1973		1960	1973	
Letcher	0	0	Breathitt	0	7	
	8	5	Floyd	21	15	
	82	160	Harlan	135	70	
	68	45	Knott	105	98	
	0	25	Leslie	8	5	
	187	108	Perry	61	69	
	68	149	Pike	102	200	
	17	3	Dickerson, Va.	8	34	
	47	71	Wise, Va.	119	172	1973 - 3,295
	8	0	Lee, Va.	0	6	1960 - 4,917
Total	485	566		559	676	
Knott	0	13	Breathitt	4	6	
	155	212	Floyd	44	167	
	4	0	Harlan	0	6	
	105	98	Letcher	68	45	
	0	0	Magoffin	4	8	
	324	174	Perry	73	30	1973 - 1,888
	28	0	Pike	17	6	1960 - 1,833
Total	616	497		210	268	
Powell	0	8	Breathitt	0	7	
	188	213	Clark	34	19	
	13	37	Estill	32	14	
	144	241	Fayette	0	0	
	16	8	Madison	4	16	
	24	135	Montgomery	19	27	
	0	7	Owsley	0	0	1973 - 977
	0	29	Wolfe	0	50	1960 - 1,051
	Total	385	678		89	133
Wolfe	0	12	Breathitt	8	22	
	0	19	Clark	0	0	
	9	8	Fayette	0	0	
	0	18	Lee	4	4	
	0	4	Menifee	7	0	
	0	5	Montgomery	0	0	
	9	32	Morgan	21	11	
	0	50	Powell	0	29	1973 - 854
	0	0	Rowan	0	7	1960 - 1,165
Total	18	148		40	73	

^aSource: "Commuting Patterns of Kentucky Counties," Kentucky Department of Commerce, 1973; 1960 Data from "Journey to Work," Bureau of Census, 1960

TABLE 11. MOTOR VEHICLE REGISTRATION FOR SELECTED YEARS^a

COUNTY	1960	1965	1970	1972	1960	1965	1970	1972
	PASSENGER CARS				FARM TRUCKS			
Breathitt	1,936	2,801	3,257	3,881	477	599	89	109
Knott	2,400	3,431	4,076	4,807	343	391	24	27
Letcher	6,479	8,104	8,357	9,645	669	627	33	17
Magoffin	1,749	2,146	2,609	2,894	443	494	100	100
Menifee	892	1,541	1,451	1,894	342	466	225	219
Morgan	2,160	3,060	3,536	3,942	565	884	358	349
Perry	6,644	7,639	8,323	9,527	377	459	42	26
Powell	1,641	2,066	2,871	3,215	352	416	130	162
Wolfe	1,032	1,401	1,611	1,862	363	494	179	177
	COMMERCIAL VEHICLES				MOTORCYCLES			
Breathitt	586	632	1,492	1,693	2	17	54	69
Knott	715	826	1,550	1,757	3	31	67	100
Letcher	1,529	1,742	3,264	3,658	54	111	197	266
Magoffin	470	636	1,243	1,283	4	18	22	65
Menifee	178	223	470	562	4	5	26	36
Morgan	559	856	1,518	1,750	19	29	44	51
Perry	1,857	1,893	3,292	3,932	28	102	231	467
Powell	266	413	1,004	1,009	8	22	43	35
Wolfe	223	451	774	893	5	11	15	21

^aSource: Kentucky Department of Revenue

With growth of registered vehicles comes increases in daily traffic. Data for the area is sketchy at best. The only ADT data available for the study area, other than the Parkway and KY 15, were the average number of truck trips along specific secondary roads in each of the counties (shown in Table 12). The data primarily reflect volumes of coal trucks. Data along KY 15 were available only from ADT maps. It was estimated that between 13 to 17 percent of all vehicles on the road are commercial trucks, with a vast majority of them being coal trucks (12).

Commuting between counties to work stations should increase in future years unless significant industrial growth occurs. However, it is apparent that the current gasoline crisis will provide a major constraint to travel, thereby slowing the rise in intercounty commuting.

INCOME ANALYSIS

Incomes in the study region have risen rather drastically since the Parkway's inception. From 1961 through 1971, per capita income jumped from an average of \$749 to \$1,725, an increase of about 130 percent. The Kentucky average for the same period rose 97 percent, from \$1,677 to \$3,310. Thus, while per capita income in the region is rising faster than the

Kentucky average, it is, nonetheless, only over half the average for the state, as shown in Table 13. This statistic is only one of many which indicate lingering widespread poverty in Eastern Kentucky. Personal income statistics, which reflect the total incomes of each county, are shown in Table 14.

In conjunction with the table on personal income, Table 15 shows the percentage of total personal income that is earned. Earned income is defined as personal income minus property (rent) income and transfer payments, plus contributions to social security. All counties, with the exception of Knott, experienced a decline in the percent of total personal income earned, for years 1959 - 1972. For the aggregate area, the percentage of personal income which was earned declined from an average 79 percent to about 70 percent during the period. In effect, income is now higher but a smaller percentage of it is earned. Welfare payments and food-stamp coupons probably play a more significant role in the overall economic community than ever before. Table 16 shows the approximate food-stamp coupon allotment for years 1970 - 1974, a figure which continues to climb. If economic development includes a self-sufficient working population, these statistics point out that true growth and affluency are still lacking for the majority in the area.



TABLE 12. AVERAGE NUMBER OF TRUCK TRIPS
ALONG SELECTED RURAL HIGHWAYS^a

COUNTY	AVERAGE NUMBER OF TRIPS
Breathitt	
KY 30	163
KY 40	100
Knott	
KY 7	138
Letcher	
KY 30	225
KY 7	263
Magoffin	
KY 7	146
KY 30	232
Menifee	NA
Perry	
KY 7	75
KY 476	88
Powell	NA
Wolfe	
KY 191	150

^aSource: Kentucky Bureau of Highways,
Division of Maintenance, February 1975
estimates



TABLE 13. PER CAPITA INCOME BY COUNTY^a

COUNTY	1950	1959	1961	1962	1965	1966	1967	1968	1970	1971
Breathitt	\$ 395	\$ 597	\$ 665	\$ 717	\$ 705	\$ 774	\$ 864	\$ 961	\$ 1,272	\$ 1,322
Knott	354	429	566	580	674	667	719	772	1,401	1,558
Letcher	609	946	1,036	1,008	1,229	1,331	1,503	1,600	2,506	2,624
Magoffin	326	545	556	653	740	815	908	926	1,142	1,197
Menifee	345	591	648	776	889	985	1,078	1,137	1,708	1,582
Morgan	423	771	831	1,012	1,048	1,154	1,285	1,388	1,526	1,541
Perry	945	1,089	1,058	1,036	1,121	1,190	1,378	1,498	2,109	2,345
Powell	448	644	768	944	985	1,034	1,105	1,194	1,780	1,878
Wolfe	415	599	616	774	806	815	912	1,002	1,462	1,480
Kentucky	918	1,321	1,677	1,573	2,087	2,289	2,452	2,669	3,104	3,310

^aSources: Bureau of Health and University of Kentucky Department of Rural Sociology; University of Kentucky Office of Business Development and Government Services

TABLE 14. TOTAL PERSONAL INCOME BY COUNTY (IN \$1000)^a

COUNTY	1959	1962	1965	1966	1967	1968	1969	1970	1971	1972
Breathitt	9,939	11,532	11,278	12,148	12,617	14,495	15,225	18,170	18,668	21,251
Knott	6,669	9,466	10,526	11,413	12,490	13,187	13,127	16,757	18,651	23,590
Letcher	29,183	29,354	34,832	37,196	41,973	42,901	45,738	59,193	64,923	69,781
Magoffin	6,080	7,418	7,762	8,394	8,698	9,502	9,952	11,455	12,178	13,773
Menifee	2,391	3,262	3,815	4,193	4,396	4,784	4,368	4,613	4,186	5,081
Morgan	8,249	10,396	10,806	11,835	12,423	13,115	13,402	15,237	15,722	18,985
Perry	40,406	35,938	38,832	41,968	44,964	47,461	51,911	59,676	69,531	79,813
Powell	4,491	6,600	7,013	7,349	7,027	8,462	9,155	10,396	11,041	12,607
Wolfe	4,301	5,725	5,752	5,756	5,837	6,364	6,780	8,156	8,704	10,031

^aSource: Office of Business Development and Government Services, University of Kentucky

TABLE 15. EARNINGS BY BROAD INDUSTRIAL SECTOR AS A PERCENTAGE OF TOTAL PERSONAL INCOME^a

COUNTY	1959	1962	1965	1966	1967	1968	1969	1970	1971	1972
Breathitt Total	72.1	68.3	60.9	62.1	60.4	60.7	61.4	58.2	54.7	56.9
F.E. ^b	12.7	12.3	9.3	8.4	6.6	5.3	4.0	4.0	3.4	5.1
N.F.E.	59.4	56.0	51.6	53.7	53.8	55.4	57.4	54.2	51.3	51.8
Man. ^c	4.4	4.2	3.9	2.5	2.5	2.4	2.1	1.7	1.3	1.1
Min. ^c	21.6	14.8	4.6	7.4	7.4	10.7	NA	NA	10.4	12.3
Knott Total	63.7	64.5	59.6	61.6	62.4	60.6	59.2	57.9	57.8	64.0
F.E.	6.7	4.9	1.9	1.5	0.9	0.5	0.4	0.1	—	—
N.F.E.	57.0	59.6	57.7	60.1	61.5	60.1	58.8	57.8	57.8	64.0
Man.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Min.	15.6	19.5	19.8	20.1	21.2	17.9	14.0	22.4	22.4	34.7
Letcher Total	82.9	77.9	78.3	78.2	77.6	76.5	77.6	79.2	78.5	77.6
F.E.	1.4	0.9	0.5	0.4	0.3	0.2	0.2	0.1	—	—
N.F.E.	81.5	77.0	77.8	77.8	77.3	76.3	77.4	79.1	78.5	77.6
Man.	1.4	1.5	1.3	1.3	1.8	2.0	2.2	1.7	1.6	1.4
Min.	50.2	41.8	45.6	45.2	44.3	42.0	43.7	48.4	46.3	45.5
Magoffin Total	69.8	67.9	61.0	61.9	60.2	59.9	59.7	53.0	50.7	51.9
F.E.	20.8	22.0	12.4	11.0	8.8	7.7	6.6	8.0	5.2	10.5
N.F.E.	49.0	45.9	48.6	50.9	51.4	52.2	53.1	45.0	45.5	41.4
Man.	0.8	0.7	2.1	1.7	4.1	5.4	NA	NA	NA	1.2
Min.	15.0	10.6	5.7	6.3	8.4	8.9	6.2	6.3	4.7	4.4
Menifee Total	71.7	70.4	70.9	70.6	69.2	69.0	64.8	59.6	48.2	53.8
F.E.	24.6	24.3	22.0	20.8	16.8	16.4	17.9	15.5	11.5	20.7
N.F.E.	47.1	46.1	48.9	49.8	52.4	52.6	46.9	44.1	36.7	33.1
Man.	3.1	2.6	3.9	3.2	3.7	3.3	NA	NA	NA	NA
Min.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Morgan Total	77.8	76.5	73.0	73.3	72.5	71.1	70.7	67.4	63.8	67.8
F.E.	27.7	28.9	23.6	22.1	18.0	17.9	16.6	15.6	10.2	16.5
N.F.E.	50.1	47.6	49.4	51.2	54.5	53.2	54.1	51.8	53.6	51.3
Man.	2.5	4.0	4.6	7.0	9.7	8.3	NA	8.4	8.6	9.6
Min.	7.9	4.4	2.9	2.1	2.1	1.5	1.3	1.0	NA	NA
Perry Total	84.4	77.1	74.2	75.6	75.9	74.6	76.3	75.0	76.2	77.4
F.E.	1.8	1.9	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2
N.F.E.	82.6	75.2	73.9	75.4	75.7	74.4	76.1	74.9	76.1	77.2
Man.	2.2	1.6	1.5	1.5	1.3	1.6	1.6	1.6	1.6	1.4
Min.	38.7	26.1	22.5	23.8	23.7	28.2	27.5	36.2	41.9	39.6
Powell Total	72.5	74.5	71.3	71.3	66.7	67.2	67.6	63.6	62.1	63.6
F.E.	14.6	13.4	8.7	8.5	7.9	6.3	5.9	4.9	3.2	5.9
N.F.E.	57.9	61.1	62.6	62.8	58.8	60.9	61.7	58.7	58.9	57.7
Man.	5.8	5.7	6.7	6.8	5.9	11.3	13.4	NA	10.6	NA
Min.	4.0	5.2	3.6	3.3	3.9	2.7	2.3	2.0	0.9	NA
Wolfe Total	71.5	72.4	67.6	65.0	62.6	61.2	61.3	60.0	57.8	58.2
F.E.	25.4	25.3	20.6	20.8	17.3	16.3	14.0	12.9	8.2	15.8
N.F.E.	46.1	47.1	47.0	44.3	45.3	44.9	47.3	47.1	49.6	42.4
Man.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Min.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

^aSource: University of Kentucky Department of Rural Sociology;
University of Kentucky Office of Business Development and Government Services

^bKey: F.E. - Farm Earnings
N.F.E. - Non-Farm Earnings
Man. - Manufacturing-related Earnings
Min. - Mining-related Earnings

^cManufacturing-related earnings and mining-related earnings are expressed as percentages of non-farm earnings

TABLE 16. APPROXIMATE FOOD STAMP COUPON ALLOTMENT BY YEAR^a

COUNTY	1970	1971	1972	1973	1974
Breathitt	\$ 2,000,000	\$ 2,095,000	\$ 2,225,000	\$ 2,275,000	\$ 2,605,000
Knott	1,850,000	1,960,000	2,170,000	2,160,000	2,605,000
Letcher	1,740,000	1,915,000	2,280,000	2,330,000	2,575,000
Magoffin	1,455,000	2,710,000	1,710,000	1,690,000	2,025,000
Menifee	250,000	260,000	390,000	330,000	485,000
Morgan	850,000	980,000	1,055,000	1,130,000	1,480,000
Perry	2,000,000	2,060,000	2,515,000	2,720,000	2,800,000
Powell	510,000	525,000	550,000	650,000	1,030,000
Wolfe	600,000	625,000	770,000	750,000	935,000

^aSource: Kentucky Department for Human Resources

Farm earnings as a percentage of total personal income declined substantially. More significant was that both manufacturing earnings and mining earnings also declined as a percentage of personal income. However, the fact that both earnings ratios fell is hardly surprising. Outmigration contributed to this, for it lowered the skill level of the working force while also reducing the demand for manufactured products. Though coal has always been assumed to be the basic mainstay of the economy, the decline in mining earnings to total personal income is also understandable. Mechanization of the coal industry caused widespread termination of the more menial jobs. During this period, coal was of declining importance to the growing energy needs of the nation. The data were not subject to the energy crisis of succeeding years.

Disclosure problems limited the data on these topics. Data are not disclosed when one company controls a large share of the employment, sales, or income of that industry in a county, nor is disclosure given when an industry's sales or earnings are miniscule.

To determine the major industrial component of economic development, five linear regression analyses were run. These included (1) coal production versus per capita income, (2) mining income versus personal income, (3) manufacturing income versus personal income, (4) manufacturing employment versus per capita income, and (5) mining and quarrying employment versus per capita income.

Counties were included in each analysis only if they had a reasonable amount of an industry relevant to a particular test. For instance, Menifee County has little or no mining industry. It was, therefore, omitted from any of the tests concerning mining and quarrying. Extreme values were also excluded. For details, refer to Appendix B.

Of the five tests, the analysis of coal production versus per capita income seemed to have the highest correlation. The squared correlation coefficients (r^2) of four of the five counties involved were very high, as were the t values. The counties of Breathitt, Magoffin, and Perry all had a squared correlation coefficient of over 0.9. Mining income versus personal income appeared to rank second in overall correlation. Manufacturing income versus personal income showed a fairly strong correlation. With notable exceptions in particular counties, annual manufacturing employment versus per capita income and annual mining and quarrying employment versus per capita income both had low squared correlation coefficients and t values.

The apparent paradox between the high correlation of coal production versus per capita income and the weak relationships of annual mining and quarrying employment versus per capita income can be explained by the increased mechanization and automation in the coal production process. The same phenomenon explains the disparity in manufacturing income versus personal income as compared to manufacturing employment versus per capita income. In both instances sales, production, and employee's incomes have generally risen but the gain in employment numbers has been less significant.

A limitation to this analysis was the use of a single year of data. For instance, coal production and per capita income in Letcher County normally advanced upward over the period studied. However, some yearly fluctuations in turn led to a poor result in the squared correlation coefficient and t value. If data had been bracketed in 2-year or 3-year categories, a higher correlation may have been realized. True long-run correlations would not be impaired by relatively

insignificant short-term fluctuations. Also, some expected economic time-lag relationships involved in variables such as spending, investment, and income would not have hindered the tests' long-run trend.

The number of years of formal education is a determinant of the level of income one will realize, although it is by no means the sole component. Statistics in Table 17 indicate one reason that the study area income levels are well below normal. The median educational achievement for Kentucky was 8.7 years in 1960 and 9.9 years in 1970. Median achievement in the study region was consistently about one year less than the state average. In 1970, about one-fifth of the population over 25 years of age were high school graduates (see Table 18). As in the rest of the state, females had a higher level of educational attainment than males. In 1960, females had an 8.0-year median compared to 7.6 for males. By 1970, males had nearly closed this gap, trailing by only 8.4 to 8.2 years.

A key to economic well-being in the future must be increased educational attainment, along with better facilities and qualified specialized personnel. Numerous new consolidated public schools have been opened in the past several years. Six major vocational schools have likewise been established within the past 8 years (see Table 19). These schools provide technical training skills much needed in an overall depressed economy. Until public and vocational educational facilities are adequate, significant socioeconomic development by a majority of the population will be restricted.

Table 20 shows demand deposits in all commercial banks by county for selected years 1960 - 1973. In most cases, deposits have grown by a sizable margin. Menifee County is the lone exception. That county lost deposits over the period because its banks went of business for a time in the late 1960's.

EMPLOYMENT ANALYSIS

According to census data, the area has a history of high unemployment which is considerably greater than the statewide average. Some discrepancies were found between census data and Kentucky Department of Commerce data. Overall, Commerce's data indicated a rate of unemployment quite higher than noted on census tracts. Employment data is shown in Table 21 for years 1940 to 1970. Unemployment rates for 1964 through 1972 are given in Table 22.

As in the case of population, the number in the labor force dropped tremendously in the 30-year period. The decline of coal cost many jobs which were not

replenished by expansion of new industries. Consequently, massive outmigration took place. Total employment fell from 41,853 in 1940 to 24,900 in 1970, a drop of 40.5 percent. The biggest absolute declines in employment were in Perry (4,881) and Letcher (3,702), two counties which accounted for over 50 percent of the total decline of 16,953 in the area.

Employment of women lagged well behind that of men. However, this margin is quickly closing. In 1940 to 1950 census data, men outnumbered women in the labor force by 8-1. By 1960, the ratio was lowered to 4-1. In 1970, women had about half as many members in the labor force as men. The study area has until recently ranked lower than the state average in terms of percentage of women to men in the labor force (Table 23).

In addition to the increased percentage of women in the labor force, it should be noted that since the 1950's the rate of women's unemployment has been equal to or smaller than that of men. This, however, does not necessarily reflect a good job market for women. It probably indicates that many women purposely exclude themselves from actively seeking employment because relatively few jobs are available for women. Eastern Kentucky thus still has an economy which is based on male-oriented jobs for the most part.

In five counties, the percentage of those employed to total population was significantly higher in 1970 compared to 1960 (see Appendix C). Three counties showed no significant difference. One county, Wolfe, had a significantly higher ratio of employed to total population in 1960 as compared to 1970. In many instances, these statistics may suggest some economic development in the form of more jobs. The figure is misleading, for more likely it reflects the area's losses in population during this period.

Table 24 shows employment trends for selected years 1950 through 1973 in five important categories including agriculture, for which data became available in 1967. Mining and quarrying employment dropped from a high of 12,158 for 1950 to a low of 4,468 in 1965. Afterward it showed a slow but steady upturn through 1973 when the total reached 6,272, but still only about half the 1950 figure. Potentially large employment in mining and related industries is nearly assured because of the nation's need for bituminous coal.

TABLE 17. MEDIAN EDUCATIONAL ACHIEVEMENT BY COUNTY IN YEARS (FOR THOSE 25 YEARS AND OLDER)

COUNTY	1950		1960		1970	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Breathitt	6.2	6.3	6.8	7.9	7.6	8.3
Knott	7.0	6.9	7.5	7.7	8.1	8.3
Letcher	7.7	7.7	8.0	8.1	8.3	8.4
Magoffin	7.6	7.9	8.2	8.2	8.5	8.4
Menifee	6.6	6.9	7.4	8.2	8.2	8.4
Morgan	7.1	8.1	8.1	8.2	8.3	8.4
Perry	7.8	7.8	7.9	8.1	8.4	8.5
Powell	7.0	7.0	8.0	8.2	8.2	8.4
Wolfe	7.2	7.6	7.2	8.2	8.1	8.1

TABLE 18. PERCENT OF POPULATION WHICH ARE HIGH SCHOOL GRADUATES (FOR THOSE 25 YEARS AND OLDER)^a

COUNTY	1970	
	MALE	FEMALE
Breathitt	21.6	20.9
Knott	17.0	20.5
Letcher	17.4	21.0
Magoffin	17.8	17.9
Menifee	15.5	16.0
Morgan	19.0	21.9
Perry	24.1	24.2
Powell	21.5	22.3
Wolfe	17.8	15.5

^aSource: United States Census of Population

TABLE 19. VOCATIONAL SCHOOLS

COUNTY	VOCATIONAL SCHOOL	ESTABLISHED	NUMBER OF STUDENTS	NUMBER OF TEACHERS
Breathitt	Breathitt Co. Area Voc. Ed. Cntr.	9/68	161	10
Knott	Knott Co. Area Voc. Ed. Cntr.	9/69	139	7
Letcher	Letcher Co. Area Voc. Ed. Cntr.	9/69	252	13
Menifee	Frenchburg P-Sec & Adult Voc. Ed. Cntr.	2/71	61	6
Morgan	Morgan Co. Area Voc. Ed. Cntr.	9/74	65	5
Perry	Hazard St. Voc. Tech. School	10/67	454	38

**TABLE 20. DEMAND DEPOSITS IN ALL COMMERCIAL BANKS
(FOR JUNE OF EACH YEAR) (IN \$1000)^a**

COUNTY	1960	1962	1964	1966	1970	1973
Breathitt	1,566.6	1,621.7	1,959.2	2,372	3,061	5,071
Knott	1,278.3	1,376.9	1,503.4	1,872	2,561	7,990
Letcher	3,914.7	3,804.8	4,851.2	5,042	8,708	11,368
Magoffin	1,147.8	1,188.6	1,435.7	1,735	2,911	3,699
Menifee	10,998.0	10,968.4	12,639.3	0	0	844
Morgan	2,185.0	2,358.1	3,181.2	3,317	3,445	4,870
Perry	5,600.0	5,055.1	5,454.5	6,548	10,040	15,545
Powell	1,106.5	1,282.8	1,297.5	1,436	2,182	3,050
Wolfe	826.6	1,324.9	1,304.5	1,359	2,587	2,164

^aSource: "National Summary of Accounts and Deposits in All Commercial Banks", F.D.I.C., Washington, D.C.

TABLE 21. EMPLOYMENT BY COUNTY^a

COUNTY	LABOR FORCE	EMPLOYED	UNEMPLOYED	UNEMPLOYED RATE
1940				
Breathitt	6,827	4,887	1,324	20.4
Knott	5,204	3,701	871	16.7
Letcher	10,815	8,797	1,175	10.9
Magoffin	5,001	3,878	652	13.0
Menifee	1,802	1,484	210	11.7
Morgan	5,130	4,499	148	2.9
Perry	13,137	10,686	1,495	11.4
Powell	2,194	1,543	283	12.9
Wolfe	3,074	2,378	240	7.8
Area Total	53,184	41,853	6,398	12.0
Kentucky Total	998,700	847,563	95,811	9.6
1950				
Breathitt	5,012	4,362	83	1.7
Knott	4,362	4,205	157	3.6
Letcher	9,540	8,972	568	6.0
Magoffin	3,537	3,486	51	1.4
Menifee	1,324	1,312	12	1.0
Morgan	3,719	3,679	40	1.1
Perry	11,699	11,345	354	3.0
Powell	1,761	1,622	139	7.9
Wolfe	2,050	2,030	20	1.0
Area Total	43,004	41,580	1,424	3.3
Kentucky Total	984,410	918,225	36,185	3.7
1960				
Breathitt	2,760	2,476	284	10.3
Knott	3,008	2,665	343	11.4
Letcher	6,833	6,054	779	21.3
Magoffin	2,112	1,662	450	7.6
Menifee	1,193	1,102	91	5.8
Morgan	2,840	2,674	166	10.5
Perry	7,622	6,821	801	10.5
Powell	1,781	1,578	203	11.4
Wolfe	1,400	1,350	50	3.6
Area Total	29,549	26,382	3,167	10.7
Kentucky Total	996,194	935,944	60,250	6.0
1970				
Breathitt	3,172	2,944	228	7.2
Knott	3,102	2,823	279	9.0
Letcher	5,347	5,095	252	4.7
Magoffin	1,819	1,610	209	11.5
Menifee	1,022	986	36	3.5
Morgan	2,695	2,502	193	7.2
Perry	6,338	5,805	533	8.4
Powell	2,299	2,079	220	9.6
Wolfe	1,238	1,056	91	7.4
Area Total	27,032	24,900	2,132	7.9
Kentucky Total	1,141,594	1,008,758	52,836	4.6

^aSource: United States Census of Population

^bDiscrepancy in 1940 data reflects workers on public emergency work

TABLE 22. UNEMPLOYMENT RATES (IN PERCENTAGES)^a

COUNTY	1964	1965	1966	1967	1968	1969	1970	1971	1972
Breathitt	31.0	34.3	31.5	24.7	18.6	8.7	9.6	7.6	7.3
Letcher	12.9	12.4	11.4	9.4	10.2	7.4	7.9	9.4	9.0
Knott	29.5	33.6	30.5	23.7	20.4	14.5	14.7	13.2	12.7
Magoffin	29.7	21.2	24.4	20.0	18.2	23.3	26.3	22.4	23.9
Menifee	23.8	25.4	19.5	11.9	12.4	15.6	16.2	18.7	18.9
Morgan	8.5	9.0	12.6	6.0	5.2	6.4	7.3	7.0	9.1
Perry	21.3	18.5	14.9	12.4	9.7	7.4	9.1	9.2	8.9
Powell	17.7	15.1	10.8	14.0	12.9	9.1	16.7	15.5	14.9
Wolfe	11.0	13.8	18.8	14.2	11.5	7.4	6.5	6.0	6.7

^aSource: Kentucky Department of Commerce

TABLE 23. EMPLOYMENT BY SEX^a

YEARS	LABOR FORCE	EMPLOYED	UNEMPLOYED ^b	UNEMPLOYED RATE
MALE				
1940	47,480	38,021	5,152	10.9
1950	38,094	36,853	1,241	3.3
1960	23,318	20,417	2,901	12.4
1970	18,942	17,327	1,615	8.5
FEMALE				
1940	5,704	3,832	1,237	21.7
1950	4,910	4,727	183	3.7
1960	6,231	5,965	266	4.3
1970	7,999	7,573	426	5.3

^aSource: U. S. Census of Population

^bDiscrepancy in 1940 data reflects workers on emergency public work

TABLE 24. EMPLOYMENT BY MAJOR SECTOR^a

YEAR	MINING AND QUARRYING	MANUFACTURING	WHOLESALE AND RETAIL TRADE	SELECTED SERVICES	AGRICULTURE
1950	12,158	876	1,573	493	NA
1956	7,541	993	1,947	475	NA
1958	6,982	639	1,989	435	NA
1961	5,141	558	1,853	835	NA
1965	4,368	676	2,154	543	NA
1967	4,467	972	2,213	785	3,762
1970	5,429	877	2,372	653	3,200
1973	6,272	959	3,469	2,949	2,590

^aSource: Kentucky Department of Commerce

Manufacturing employment had several major fluctuations during the period. The biggest decline came during the 1950's and early 1960's. Since then employment has risen fairly consistently. Wholesale and retail trade employment showed substantial regular gains by more than doubling during the period. This sector seemed to absorb some employment lost in the relative slump of coal in the 1950's and 1960's. By 1973, about 3,500 persons were employed in this sector of the economy, a total second only to mining in the five major categories. The service industry showed both the greatest absolute and percentage gains. Particularly noteworthy is the fact that the service sector began to thrive only after the coal industry began to recover. With more income, consumers tend to spend more toward services and purchases not deemed essential. As growth accelerates, this sector of business may flourish. The large agricultural employment, an indication of this largely un-industrialized economy, declined 31 percent from 1967 to 1973. In the earlier years, agriculture ranked second in the total employment; by 1973, it ranked fourth. Further losses in this sector appear certain. For more complete information, see Appendix D.

Employment of professional persons is limited. For example, the number of professional medical persons employed in each county is generally less than the Kentucky state average (refer to Table 25). For both 1962 and 1973, the rate of physicians per 1,000 population in every county was below the state average. The rate of dentists and nurses ranked only slightly better than physicians. Evidently, socioeconomic enticement has been inadequate to attract a reasonable number of qualified medical personnel.

Employment should continue to rise for the remainder of the 1970's and into the 1980's. Coal production should stimulate more mining employment. Wholesale and retail trade employment will probably continue to grow steadily. Employment in services will make the greatest gains for a higher standard of living will necessitate services thought of as luxuries only a decade ago. Manufacturing employment will climb, but at a smaller rate than the previously-mentioned sectors. Lack of adequate sites with electricity, water, and sewage facilities is the primary constraint. As commercialization and industrialization expands, the number of farmers may continue to decline.

As in the past, the prime stimulus for a healthy economy in Eastern Kentucky will continue to be coal production. Economic diversification has not yet taken place on a sufficient scale to offset coal as the key to income and employment. Some achievement in diversification has occurred, as in the case of the service and wholesale and retail trade sectors. However, these may be secondary benefits manifested by the resurgence of coal.

TABLE 25. NUMBER OF PERSONS IN SELECTED HEALTH OCCUPATIONS^a

COUNTY	PHYSICIANS	RATE ^b	DENTISTS	RATE	NURSES	RATE
1962						
Breathitt	3	.2	3	.2	16	1.0
Knott	3	.2	3	.2	11	.6
Letcher	18	.6	7	.2	48	1.6
Magoffin	2	.2	1	.1	2	.2
Menifee	1	.2	0	0	4	1.0
Morgan	6	.5	3	.3	2	.2
Perry	25	.7	9	.3	69	2.0
Powell	2	.3	0	0	4	.6
Wolfe	1	.2	1	.2	42	6.4
Kentucky	3,061	1.0	1,145	.4	8,046	2.6
1973						
Breathitt	3	.2	3	.2	23	1.5
Knott	4	.2	3	.2	36	2.2
Letcher	21	.8	4	.2	136	5.3
Magoffin	3	.3	1	.1	9	.8
Menifee	1	.2	2	.5	10	2.3
Morgan	3	.3	2	.2	11	1.1
Perry	27	1.0	4	.1	191	7.0
Powell	3	.4	1	.1	6	.8
Wolfe	2	.4	2	.4	8	1.4
Kentucky	3,665	1.1	1,147	.3	18,055	5.5

^aSource: Kentucky Department for Human Resources, Division of Biostatistics

^bRate: Number per 1000 Population

BUSINESS STUDY ANALYSIS

Significant growth in the business community of the Parkway and KY 15 has occurred since the inception of these new roads. Retail trade receipts tripled from 1954 through 1972; the number of establishments rose about 20 percent. Wholesale receipts increased from 1 million dollars in 1954 to about 58 million dollars for 1972. The number of wholesale establishments nearly doubled, from 59 to 96. In the service trade, receipts rose by about five times. The number of service-type

establishments increased twofold. As expected, greatest absolute gains in these business categories came in the counties of Perry and Letcher where the populations are the largest. These statistics compare with state totals for years 1954 through 1972. In that period, retail sales tripled and the number of establishments rose 12 percent. Wholesale receipts more than tripled; the number of establishments increased 73 percent. In the service industry, both sales and number of establishments rose almost identically, by more than doubling. Tables 26, 27, and 28 present these data.

TABLE 26. RETAIL TRADE RECEIPTS (IN \$1,000) WITH NUMBER OF ESTABLISHMENTS IN PARENTHESIS^a

COUNTY	1954	1958	1963	1967	1972
Breathitt	\$ 5,172 (99)	\$ 5,420 (120)	\$ 7,602 (152)	\$ 8,637 (139)	\$ 15,639 (278)
Knott	2,294 (94)	3,594 (136)	4,428 (139)	5,011 (126)	10,748 (123)
Letcher	12,591 (250)	14,799 (250)	19,145 (293)	18,201 (264)	27,749 (278)
Magoffin	1,949 (41)	3,021 (78)	4,252 (113)	4,798 (95)	7,586 (87)
Menifee	584 (16)	962 (30)	1,250 (33)	2,233 (27)	3,179 (34)
Morgan	4,309 (83)	5,513 (86)	7,552 (113)	7,393 (101)	17,693 (95)
Perry	19,778 (328)	23,722 (327)	26,176 (342)	31,492 (339)	49,030 (332)
Powell	1,572 (52)	1,883 (61)	3,412 (81)	4,113 (83)	8,406 (78)
Wolfe	1,203 (48)	1,367 (53)	3,327 (62)	3,879 (64)	7,030 (71)
Total	49,452 (1011)	60,281 (1141)	77,144 (1328)	85,757 (1238)	147,060 (1238)
Kentucky	2,201,101 (26472)	2,580,517 (29707)	3,174,265 (30107)	3,982,512 (28937)	6,161,081 (29668)

^aSource: United States Census of Business (data 1954 - 1967); Census of Retail Trade, United States Department of Commerce, Social and Economic Statistics Administration (1972)

TABLE 27. WHOLESALE TRADE RECEIPTS (IN \$1000) WITH NUMBER OF ESTABLISHMENTS IN PARENTHESIS^a

COUNTY	1954	1958	1963	1967	1972
Breathitt	NA (8)	1,886 (8)	3,513 (6)	5,030 (9)	7,752 (7)
Knott	NA (2)	NA (3)	NA (2)	NA (2)	NA (4)
Letcher	343 (13)	9,297 (21)	14,844 (24)	13,378 (26)	14,297 (27)
Magoffin	61 (5)	1,271 (4)	1,228 (5)	1,322 (3)	3,777 (9)
Menifee	0	NA (1)	0	0	0
Morgan	NA (5)	1,998 (5)	3,066 (4)	3,329 (8)	4,740 (9)
Perry	637 (24)	NA (34)	13,521 (30)	20,488 (32)	26,275 (34)
Powell	NA (2)	NA (2)	412 (3)	200 (3)	904 (4)
Wolfe	0	NA (1)	NA (1)	NA (1)	NA (2)
Total	1,041 (59)	14,452 (79)	36,584 (75)	43,747 (84)	57,745 (96)
Kentucky	2,029,978 (2720)	2,563,976 (3220)	3,211,260 (2632)	3,994,113 (3715)	7,020,108 (4709)

^aSource: U. S. Census of Business (Data: 1954 - 1967); Census of Wholesale Trade, U. S. Department of Commerce, Social and Economic Statistics Administration (1972)

TABLE 28. SERVICE TRADE RECEIPTS (IN \$1000) WITH NUMBER OF ESTABLISHMENTS IN PARENTHESIS^a

COUNTY	1954	1958	1963	1967	1972
Breathitt	225 (25)	235 (24)	599 (56)	385 (37)	1,364 (50)
Knott	122 (14)	207 (17)	200 (26)	222 (29)	463 (31)
Letcher	690 (42)	1,032 (60)	1,092 (62)	1,477 (71)	3,540 (89)
Magoffin	151 (14)	137 (14)	162 (15)	235 (31)	397 (28)
Menifee	NA (1)	NA (1)	101 (14)	93 (31)	NA (14)
Morgan	222 (16)	249 (26)	397 (24)	274 (22)	654 (42)
Perry	1,143 (64)	1,514 (67)	1,803 (99)	2,178 (86)	4,795 (111)
Powell	123 (3)	156 (14)	250 (18)	357 (32)	856 (49)
Wolfe	NA (3)	197 (18)	257 (25)	253 (17)	173 (15)
Total	2,676 (182)	3,727 (241)	4,891 (339)	5,474 (338)	12,242 (429)
Kentucky	211,998 (9181)	290,557 (12707)	386,024 (13188)	496,731 (16412)	951,325 (20018)

^aSource: U. S. Census of Business (data 1954 - 1967); Census of Selected Service Industries, U. S. Department of Commerce, Social and Economic Statistics Administration (1972)

Most business development and expansion appears to have taken place within the cities. Business locations in rural areas of all nine counties were studied. The primary purpose of this analysis was to see if noticeable business growth and diversification had taken place outside of the towns. Locations were studied along the following highways:

- Powell County - KY 15, KY 214;
- Wolfe County - KY 15, KY 191;
- Menifee County - US 460;
- Morgan County - US 460, KY 191;
- Breathitt County - KY 15;
- Magoffin County, US 460, KY 7, KY 134, KY 114;
- Perry County - KY 15;
- Knott County - KY 15; and
- Letcher County - KY 15.

With the exception of urbanized areas, the entire length of each particular highway in a county was studied. Business locations along KY 15 in Stanton and Clay City were studied because of the notable growth of these towns in terms of both population and commerce. Also sampled were all businesses along US 460 in Frenchburg in Menifee County. Frenchburg has a population of around 500 and, therefore, cannot be classified as urban.

With help from Area Development District personnel in each county, it was determined that there were 206 locations at which businesses were operating or had operated at one time during the period from 1961 through 1973. About 10 locations had to be excluded from the study because data on these sites were impossible to obtain. These businesses basically were chain-store type operations whose breakdown of

revenue by store was not possible. Pure service businesses were omitted from the analysis because their files were not available. However, these type establishments formed only a small percentage of business ventures. Nearly all businesses sold some tangible products for which records were available. Data prior to 1969 is slightly less accurate due to the fact that several businesses' records became out of date and subsequently had been discarded by the Kentucky Department of Revenue. Businesses may have existed prior to 1969 for which records were not available. Overall, however, the study is indicative of business conditions in rural segments of the region.

Turnover in business ownership of the small, marginal business was great. Business failures were commonplace. Average ownership life for them was about 16 months to 2 years. This information was obtained through personal interviews with owners. Some established businesses had operated under one owner or one family for many years. However, it was evident that many were able to do so only by relocating. For example, numerous businesses were forced to relocate from the old KY 15 route to new KY 15 route or face extinction.

As shown in Table E1 of Appendix E, the number of businesses along these highways generally increased during the 13-year period, according to available data. Their average receipts increased likewise. Average gross receipts for a business were close to \$200,000 per year. This average is misleading because the median was well under \$100,000. Average receipts were inflated due to sizable steady revenue earned by several coal companies and established general stores.

Diversity in business types was severely limited. The four categories of a business were gasoline service stations, grocery stores (stores in which food is the main item sold), auto sales, and restaurants. The four comprised over 60 percent of all establishments studied and generally accounted for 40 percent of total taxable gross receipts, although the receipts showed wide fluctuations. A survey of retail businesses in all of Kentucky from 1963 through 1972 showed that these four business types accounted for generally 55 percent of all establishments and for 58 percent of total taxable gross receipts (13).

The trend of uniformity in business types does not appear to be changing radically. The number of these four types of establishments in 1973 totaled 65 percent, second yearly high only to the 1966 figure of 66 percent. Data are presented in Table E2 of Appendix E.

Probable reasons for the relative stagnation of the business community in rural areas are twofold. First, better roads have made accessibility to cities considerably easier. Consumers purchase nearly all their goods and services in the cities. Businesses outside towns are no more convenient to reach and are not as diverse in their inventories. Secondly, consolidation of many school systems has further added emphasis to the towns. People now locate closer to the schools which are normally within a city. Small general stores cannot compete with the larger chains in either selection or price.

COAL AND ENERGY

The importance of coal to the total socioeconomic environment of Eastern Kentucky cannot be overstated. Changes in almost every conceivable facet of living are heavily influenced by coal. Coal has been and still is essentially the lifeblood of the economy.

Unfortunately, Eastern Kentucky has not diversified economically to an extent where declines in the coal industry can be absorbed without major economic recession. Coal produces a unique feast-or-famine situation. When the demand is strong, a semblance of prosperity reigns. Jobs are available; incomes rise; consumption flourishes; service-type businesses evolve. When demand slackens, unemployment rises to unacceptable levels and outmigration to more prosperous areas accelerates.

Figure 2 shows the history of coal production in Kentucky since 1890. Coal production has generally increased throughout the era, but there were two strong exceptions. One was during the Great Depression when national demand and investment were at acutely low

levels. The slackened demand for coal, most notably coal for industrial purposes, was indicative of the total economic position of the nation rather than a localized downturn in Eastern Kentucky or a massive switch to alternative fuels for sources of energy.

The other period of downturn in coal production came throughout the 1950's. Substitute fuels were being implemented as prime energy sources. Mechanization of coal production also created widescale unemployment. One should take notice that during the Depression relatively little outmigration occurred since prospects for employment were no better anywhere else. Also, travel mobility was more restricted due to lack of both automobiles and good highways. However, during the 1950's, economic conditions were superior throughout the remainder of the country than in Appalachia. This led to the decade of the most massive outmigration. The correlation between coal production and the total socioeconomic climate, therefore, has obviously been strong.

Eastern Kentucky mines a high-quality, low sulphur, bituminous coal which is useful in production of numerous articles such as dyes, perfumes, paper, cloth, and steel. However, of prime concern to the nation is Kentucky's coal as an energy source. The current energy crisis has vaulted Kentucky into the leadership of states in coal production. It currently mines about 140 million tons (127 Tg). In 1973, the study area counties produced about 23 million tons (20 Tg), or 16 percent of the state total. Table 29 shows total coal production by county for years 1960-1973. Figure 3 shows production by tons per square mile (kg/m^3). A year-by-year breakdown of these statistics is presented in Appendix F. No production was recorded in Powell County.

The magnitude of the coal business in Kentucky is well explained by the number of both utility and non-utility buyers. There are 89 utility buyers for 157 plants in 24 states. Non-utility buyers include 107 companies in 16 states and in Canada (14). Figure 4 indicates the approximate percentages of Eastern Kentucky coal exported to other states.



Figure 2. Kentucky Coal Production (1890-1973) (from Reference 8).

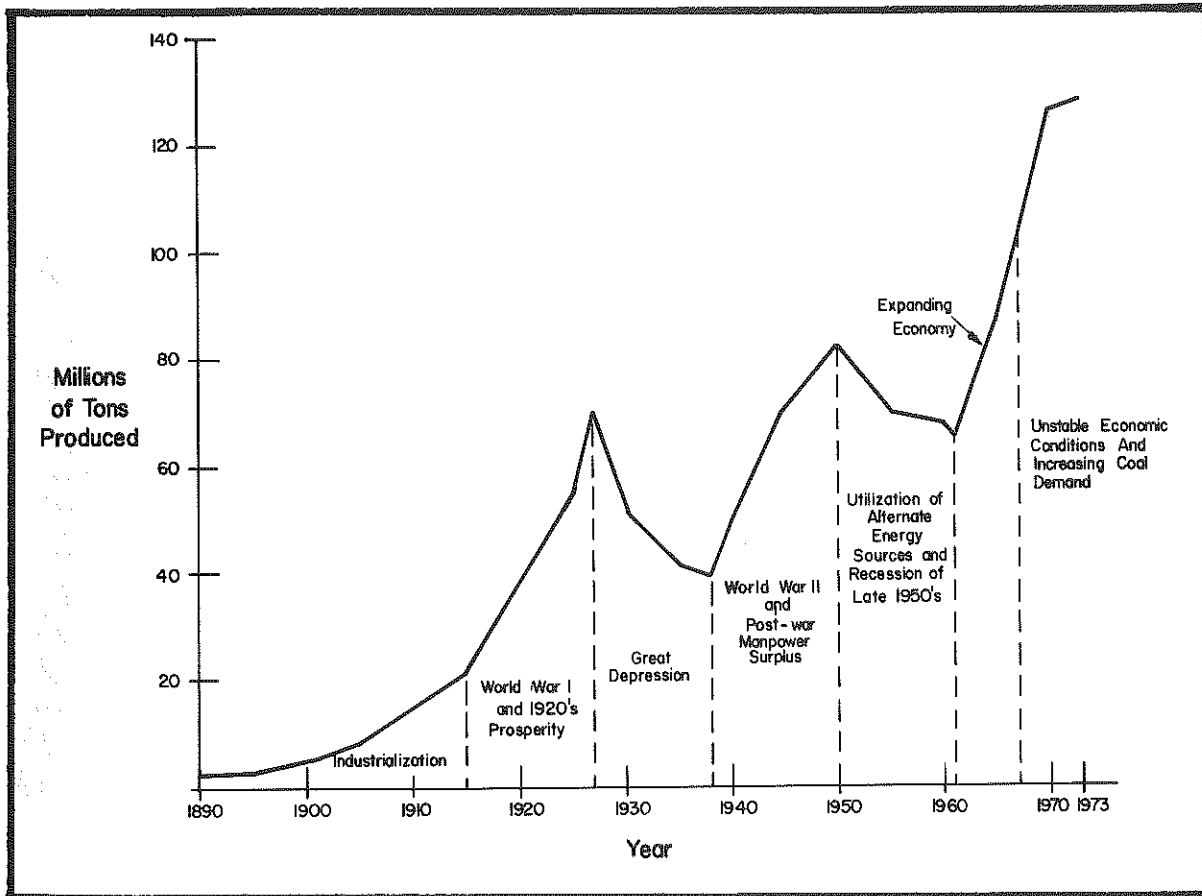


TABLE 29. COAL PRODUCTION:
1960 - 1973 (TONS)

COUNTY	PRODUCTION
Breathitt	29,570,260
Knott	37,207,727
Letcher	80,386,077
Magoffin	4,523,336
Menifee	1,300
Morgan	1,130,793
Perry	68,707,477
Powell	
Wolfe	99,734
Kentucky Total	1,345,764,851

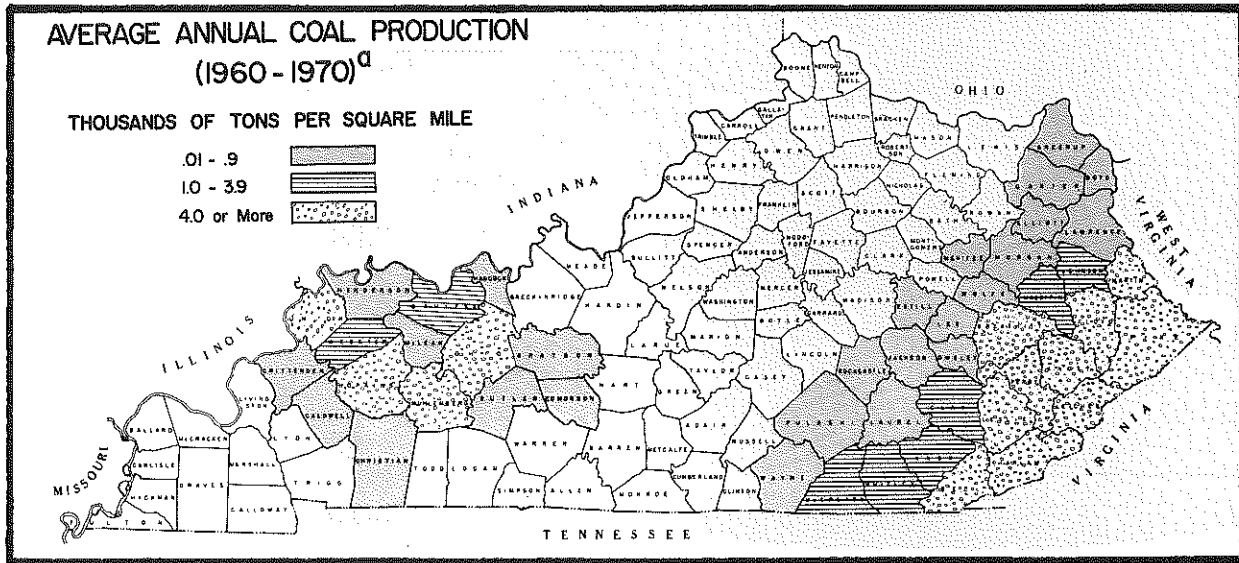
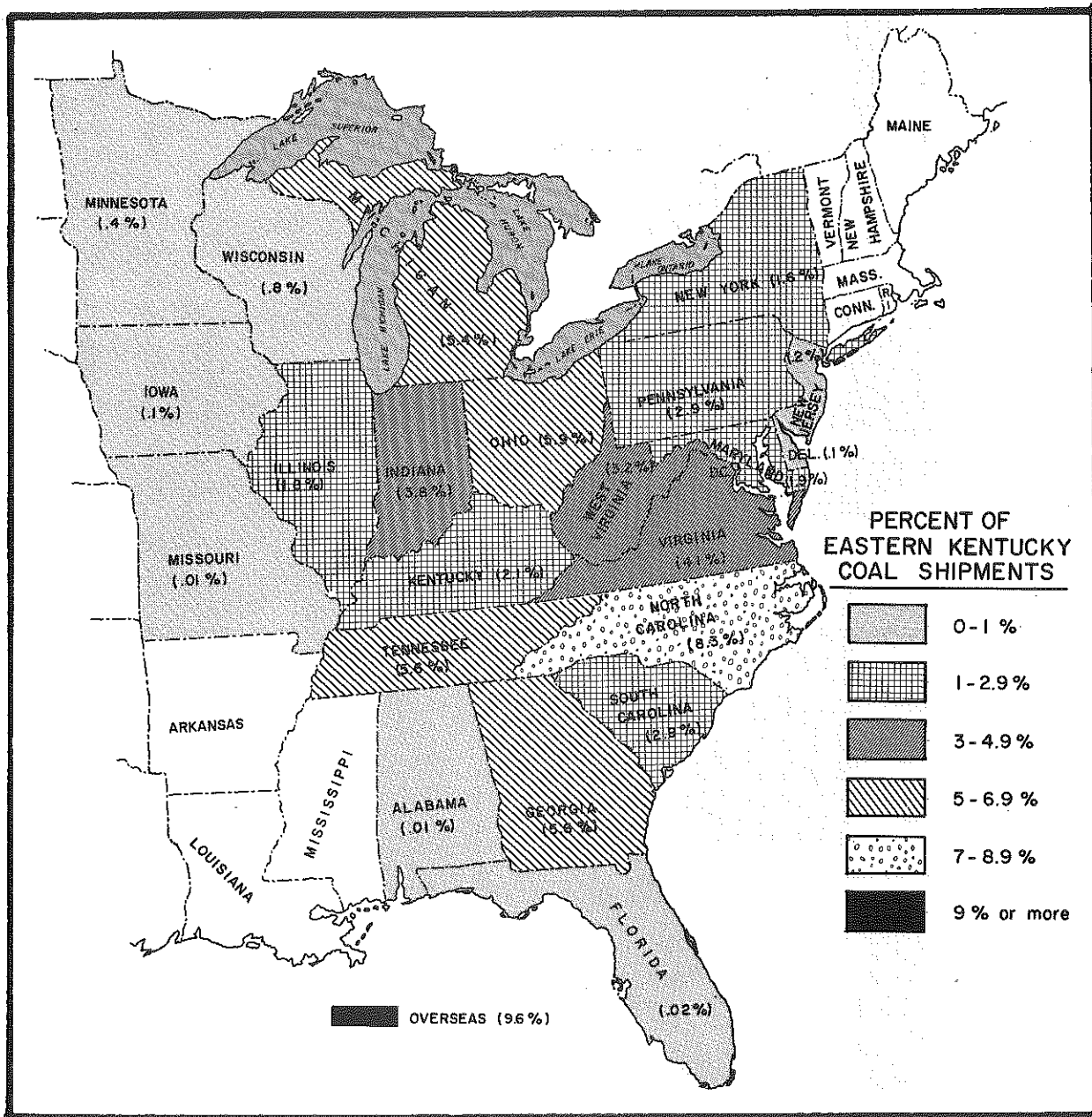


Figure 3. Average Annual Coal Production (from Reference 8).

Figure 4. Eastern Kentucky Coal Shipments (1970) (from Reference 8).



The state should remain a top producer for many years since its estimated resources are about 65 billion tons (59,000 Tg) (15). Coal reserves by county are shown for 1974 in Table 30. Powell, Menifee, and Wolfe Counties currently produce little or no coal, but this statistic will very likely change. The price of coal is now high enough to make mining economically rewarding in areas heretofore thought unprofitable. Even in-state demand for coal from Eastern Kentucky should continue to climb. Recent EPA rulings have stated that coal used in utilities must have a relatively low sulphur content, a quality which most of Western Kentucky's coals do not exhibit. In fact, coal from the mountains may soon be the main energy source for Western Kentucky utilities.

Re-emergence of coal has produced a heavy burden on the road system. Figure 5 shows Kentucky coal haul roads by region. With the exception of Menifee (not regarded as a coal county), all study area counties are in the Eastern Kentucky haul region. Figure 6 notes the percent change of limited coal haul licenses issued in coal-producing counties for years 1972 through 1974. Substantial increases in coal truck traffic have caused considerable damage to roads. The majority of the roads were not constructed for such heavy loads.

Included among the damaged roads is KY 15. Structural damage is most evident through the section in Breathitt and Perry Counties where coal is transported at an increasing rate. Other rural secondary roads have almost been completely destroyed from coal truck traffic. A dilemma and a paradox exists in this situation. Strong demand for coal creates great incentive for swift and large-scale shipping from the mining areas. Presently, transportation by trucks is the most efficient method. It is imperative that coal continue to flow from the area. Without coal, the economy would stagnate and unemployment and poverty escalate. Yet, the economics of the power generated by coal must be counterbalanced by concern for the road system. Overall benefits, such as accessibility to goods and services via better roads, cannot be secured with damaged or destroyed roads. A compromise between the two forces must be reached. The startling statistics are that about 75 percent of all state-maintained roads upon which coal is hauled are deficient. In the entire Eastern Kentucky region, approximately 85 percent of all such state-maintained roads are inadequate (8).

In addition to coal production, there is some potential for oil production in the area. Table 31 shows crude oil production by counties for years 1967 to 1971. Even though the data pertains to pre-energy crisis years, significant amounts of production have been achieved. As in coal, the price of oil should create incentive for further exploration and drilling and, thereby, further stimulate the local economy.

LAND VALUE SURVEY

A land value survey of selected parcels at interchanges of the Parkway and plots along KY 15, US 460, and KY 7 was undertaken to determine the effect of these roads on assessed values. Generally, the assessed value of a parcel for years 1973 or 1974 was compared to its value about 10 to 12 years prior. Also, studied were random plots of land throughout the different counties to note trends in land values.

Many tracts along these major highways have been sold several times. Assessment of a particular tract over a period of time, therefore, was difficult. Also, land tracts have been subdivided. Most property valuation administrators cannot separate values of one's individual plots. For instance, someone may have a total of 50 acres (202 km²) and the assessed value may be \$30,000. Records were not readily available as to the number of tracts this value encompassed. County administrators' records failed to follow the history of land ownership. Only through personal interviews with present and former owners could acreage be determined.

To insure that the same acreage would be compared for two different years, over 50 percent of land studied were tracts which had not changed hands. This placed a strict limitation on data and likely biased it somewhat. Land with a high turnover rate is probably more in demand by businesses and private citizens. Land which changed hands was figured as closely as possible to the size of the original tract. In this respect, analysis of interchanges was considerably easier because companies often had bought five or six tracts.

Property valuations are not logically consistent. Some may be subject to political self-interests. Some valuations include tangible items on the property, such as a car and a house. Other valuations have included only the value of the land.



Despite the many shortcomings of this study, several general findings could be presented: (1) accessible land at interchanges of the Parkway has skyrocketed in value basically because oil companies bought at rather high prices; (2) accessible land along new KY 15 has increased in assessed value significantly and its market values were well above the assessed figure; (3) inaccessible land or land on rough or steep terrain off KY 15 has probably declined in market value because speculators and businesses see no possible use

for these parcels; (4) in general, land along major highways in the study area increased greatly in value.

Land plots throughout the individual counties were chosen and studied to determine how their assessed values had changed. This was intended to show a comparison of the change in value of land along the major roads to land scattered throughout the county. Data for the land value study are shown in Appendix G.

TABLE 30. COAL RESERVES BY COUNTY (1974)^a
(IN MILLIONS OF TONS)

COUNTY	RESERVES	RESERVES PER SQUARE MILE
Breathitt	1812.08	3.7
Knott	2394.89	6.7
Letcher	1344.50	4.0
Magoffin	1120.11	3.7
Menifee	30.42	0.1
Morgan	475.69	1.3
Perry	1903.79	5.6
Powell	3.90	0.02
Wolfe	207.84	0.09

^aSource: "Kentucky Coal and Its Transportation Impacts", Kentucky Department of Transportation, Division of Planning, November 1974

Figure 5. Kentucky Coal Haul Regions (from Reference 8).

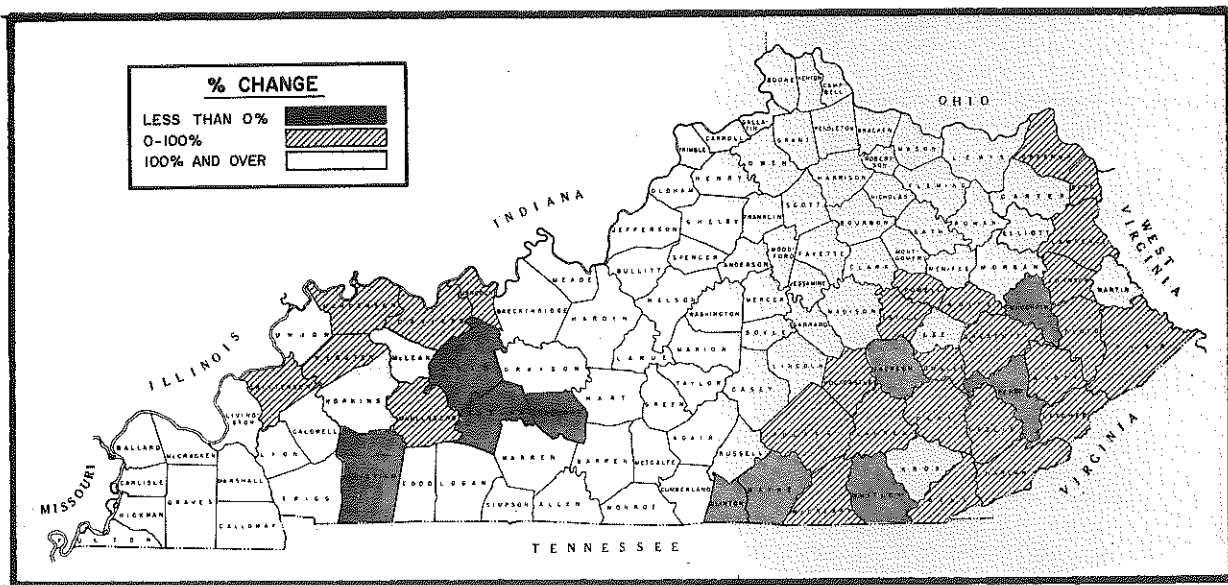
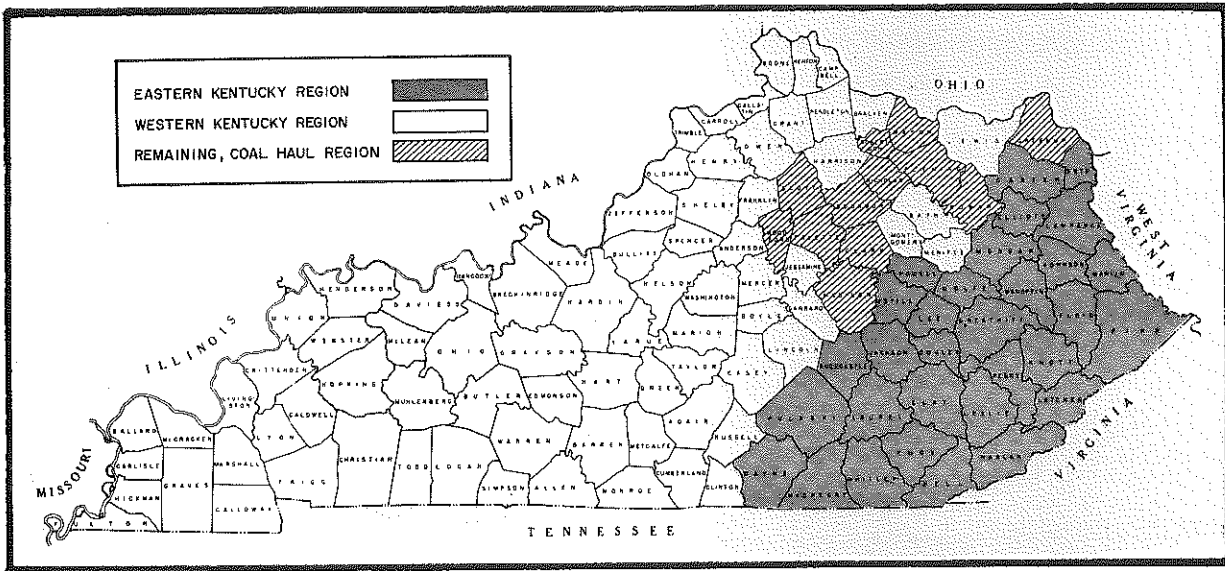


Figure 6. Percent Change of Limited Coal Haul Licenses Issued in Coal-Producing Counties (1972-1974) (from Reference 8).

TABLE 31. CRUDE OIL PRODUCTION BY COUNTY (IN BARRELS)^a

COUNTY	1967	1968	1969	1970	1971
Breathitt	34,700	28,902	22,807	21,734	15,674
Knott	12,392	9,547	7,966	8,119	7,367
Letcher	32,614	112,792	257,792	283,910	226,247
Magoffin	491,920	425,359	343,721	286,038	235,813
Menifee	1,003	0	0	0	0
Morgan	1,228	1,339	1,148	695	2,988
Perry	19,225	28,059	155,367	198,892	171,152
Powell	74,725	58,092	36,513	33,074	33,478
Wolfe	13,392	9,630	6,050	16,075	54,956

^aSource: Kentucky Department of Revenue

SUMMARY AND CONCLUSIONS

Socioeconomic data from 1960 to the mid-1970's indicate that the outward migration from the study area has almost been halted because of the re-emergence of coal as a supplier of energy for the nation. Wholesale, retail, and service-type trade has greatly expanded. Some manufacturing and industrialization has taken place, although not on a massive scale. Employment levels are climbing. Incomes are rising faster than the state average, but they are still very low.

The area has great potential for growth in coal-related industries. Large deposits of coal remain untouched. Oil, natural gas, timber, and tobacco products likewise may increase the standard of living. New goods and services are available as a result of increased accessibility through better roads such as the Parkway and KY 15.

On the other hand, great difficulties must be overcome in order for the area to reach a state of noticeable improvement in the quality of life. Poverty remains widespread; food stamp and welfare payments are still on the increase. Educational facilities are understaffed and usually outdated. The median educational achievement is well below that required to complete high school. Economic incentives are far too inadequate to insure proper numbers of doctors, dentists, and other medical personnel.

Despite the recent improvement in the road system, the area still has only about half the population per square mile (2.6 Mm²) compared to the rest of the state. In this sense, it is still isolated. Industrial promise is limited, basically due to an unskilled labor force and a small amount of usable land. Recreation and cultural enhancements are few.

The major centers of growth for the remainder of the century should be Hazard, Jackson, and Stanton. A mountain coal town, Hazard is fairly accessible from many parts of Eastern Kentucky because it is intersected by the new Daniel Boone Parkway and KY 15. Jackson is located 32 miles (51 km) northwest of Hazard. It is rapidly becoming a major trade center for the region. Commercial development along the new KY 15 in Jackson is well advanced for the study area. Both towns presently are reaping large economic benefits from the strong demand for coal as Breathitt and Perry Counties together produced over 12 million tons as early as 1973. Perry County is the only study area county in which sales of alcoholic beverages are legal. This accounts for about 12 percent of its total retail sales, or nearly five million dollars annually (16).

Stanton, unlike Hazard or Jackson in many respects, should likewise enjoy continued growth. It is near enough to Lexington, Winchester, and Mt. Sterling for its residents to commute to industrial jobs, although the energy crisis may somewhat curtail increased commuting. Mining will not be a stimulus for growth in Powell County, for little coal exists to be mined. Stanton does have a relatively large amount of flat land which could be used for industrial sites. This land, however, is located mostly on flood plains. Some type of flood control will be necessary before Stanton can attract industry on a wide scale. Access to the Parkway appears to be the biggest attribute for the town in its struggle for economic growth.

The remainder of the study region should prosper to some degree. The role of each major city should continue to increase in the socioeconomic activities of the county because most goods and services are located in urban areas. The basic infrastructure of the very poor counties of Wolfe and Menifee may change very little.

The impact of the Parkway and KY 15 has yet to be fully felt even though some degree of economic progress has been attained by the region. Better highways can only combine with existing resources for overall growth. This region has vast potential for coal, timber, and tourism. Through a regionalized effort, such as the recently established Area Development Districts, Eastern Kentucky may eventually incorporate its resources with modern highways to create a region of prosperity long awaited.

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APPENDIX A

**THE MULTIPLIER EFFECT AND
COMMUNITY ECONOMIC GROWTH**

The occurrence of economic growth is readily determined by additional amounts of money pumped into the income stream. This is usually achieved by long-run investments in either the public or private sector of the economy. In fact, investment is the crucial component of development.

As investment increases, the entire community is benefitted by new income in the stream. For example, when investment in capital equipment occurs, other businesses receive money for the equipment and services they sold to the expanding business. Then these businesses, like consumers, may take several courses of action with this new income. They may spend it, invest it, or save it. For simplicity, the example here shows only consumption (spending) and saving. Suppose 1 dollar is invested by a company, thus injecting money into the income stream. Also suppose that every consumer has a marginal propensity to consume \$0.75. That is, for every dollar received, he will spend \$0.75 and save \$.25. Thus, the first recipient of the first invested dollar spends \$0.75 and saves \$0.25. This \$0.75 expenditure is passed on to a second recipient, who spends \$0.56 and saves \$0.19. The process continues as follows:

Recipient	Spends \$1.00 injected	Saves
1	.75	.25
2	.56	.19
3	.42	.14
4	.32	.10
5	.24	.08
6	.18	.06
7	.14	.04
8	.11	.03
9	.08	.03
10	.06	.02

When consumed down to an infinitely small amount, this original one dollar expenditure will have generated about four dollars of community income. In other words, there has been a multiplier effect of 4. This can be calculated mathematically by the simple formula:

$$1/(1 - mpc) = \text{multiplier effect}$$

where mpc stands for the marginal propensity to consume. For example, if one dollar were injected into the income stream and the mpc were 0.8, the multiplier effect would be 5 (i.e., $1/(1 - 0.8) = 1/.2 = 5$). This injection must be a continuous, long-term phenomenon. If the level of investment declines, the multiplier effect will subsequently fall. Likewise, if the investment is a one-shot event, the level of income increase will eventually revert back to zero.

If the business climate is favorable, some amount of the before-mentioned dollar may be reinvested. The multiplier effect for an additional amount of investment itself is computed by $1/(1 - mpi)$, where mpi, the marginal propensity to invest, shows the percentage of each dollar received that is invested. However, the total multiplier effect of both consumption and reinvestment of the model dollar is $1/(1 - mpc - mpi)$.

It can thereby be discerned how an increase in investment will improve the economy of an area by producing additional income. A quantitative benefit can be derived from new investment or expansion of present plant facilities. The same results are received by investment in the public sector.

It becomes evident that investment expenditures in the study region aid in development. A \$1,000,000 investment would create \$4,000,000 in community income which would noticeably raise employment levels. If this assumption of the investment function in Keynesian economics is valid for this area, investment in either sector of the economy will facilitate development.

APPENDIX B

REGRESSION ANALYSES

To statistically determine major components of growth in the study area, five regression analyses were performed. Categories and years included in each regression study were as follows:

1. Coal Production versus Per Capita Income:
1962, 1965, 1966, 1967, 1968, 1970, and 1971
2. Mining Income versus Personal Income:
1950, 1962, 1965, 1966, 1967, 1968, 1969, 1970,
1971, and 1972
3. Manufacturing Income versus Personal Income:
1950, 1962, 1965, 1966, 1967, 1968, 1969, 1970,
1971, and 1972
4. Manufacturing Employment versus Per Capita
Income:
1950, 1959, 1962, 1965, 1966, 1967, 1968, 1970,
and 1971
5. Mining and Quarrying Employment versus Per
Capita Income:
1959, 1962, 1965, 1966, 1967, 1968, 1970, and
1971

Statistical results are presented in the following tables and figures.

TABLE B1. REGRESSION ANALYSIS OF MANUFACTURING INCOME VERSUS PERSONAL INCOME (BOTH IN \$1,000), SELECTED YEARS 1959-1972

COUNTY	ANNUAL MANUFACTURING INCOME		PERSONAL INCOME		EQUATION	SQUARED CORRELATION COEFFICIENT	T-VALUE
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION			
Breathitt	\$344.80	\$82.59	\$ 1,4532.20	\$ 3,741.70	27,152.98 - 36.60 AMAI = PI	0.65	-3.88
Magoffin	212.00	183.21	7,975.67	1,181.24	6,798.30 + 5.55 AMAI = PI	0.74	3.39
Morgan	965.89	522.95	12,974.22	3,242.25	7,218.80 + 5.96 AMAI = PI	0.92	9.20
Perry	690.00	130.83	51,050.00	14,404.31	4,457.28 + 67.53 AMAI = PI	0.38	2.20
Powell	671.50	383.53	7,642.25	1,941.61	4,570.50 + 4.57 AMAI = PI	0.82	5.17

TABLE B2. REGRESSION ANALYSIS OF ANNUAL MINING AND QUARRYING EMPLOYMENT VERSUS PER CAPITA INCOME, SELECTED YEARS 1959 - 1972.

COUNTY	ANNUAL MINING AND QUARRYING EMPLOYMENT		PER CAPITA INCOME		EQUATION	SQUARED CORRELATION COEFFICIENT	T-VALUE
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION			
Breathitt	192.50	93.19	\$ 901.50	\$ 267.44	767.12 + 0.70 AMQE = PCI	0.059	0.61
Knott	387.00	63.69	837.25	417.55	-1,140.77 + 511 AMQE = PCI	0.61	3.05
Letcher	2,343.88	260.83	1,593.38	639.94	-3,624.42 + 2.23 AMQE = PCI	0.82	5.29
Magoffin	115.13	29.86	865.75	226.14	1,328.93 - 4.02 AMQE = PCI	0.28	-1.54
Perry	1,681.38	377.72	1,610.50	361.03	1,406.49 - 0.57 AMQE = PCI	0.004	-0.15
					1,410.23 - 0.035 AMQE = PCI	0.0007	0.066

TABLE B3. REGRESSION ANALYSIS OF ANNUAL MANUFACTURING EMPLOYMENT VERSUS PER CAPITA INCOME, SELECTED YEARS 1950-1971.

COUNTY	ANNUAL MANUFACTURING EMPLOYMENT		PER CAPITA INCOME		EQUATION	SQUARED CORRELATION COEFFICIENT	T-VALUE
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION			
Breathitt	168.00	276.10	\$ 1,442.22	\$ 1,722.02	426.90 + 6.04 AME = PCI	0.94	10.38
Knott	16.89	18.11	791.89	413.61	1,063.91 - 16.11 AME = PCI	0.50	-2.63
Letcher	161.44	46.47	1,484.00	682.64	474.98 + 6.25 AME = PCI	0.18	1.24
Magoffin	36.33	33.09	805.78	277.70	798.89 + 0.19 AME = PCI	0.51	0.02
Menifee	16.00	7.46	777.33	271.16	215.03 + 35.14 AME = PCI	0.93	7.52
Morgan	219.11	119.70	1,127.56	356.07	623.84 + 2.30 AME = PCI	0.57	3.04
Perry	169.78	103.41	1,412.33	495.30	1,362.98 + 0.29 AME = PCI	0.37	0.16
Powell	129.78	73.63	1,112.44	467.72	545.47 + 4.37 AME = PCI	0.47	2.50
Wolfe	2.67	3.00	918.33	356.64	1,122.07 - 76.40 AME = PCI	0.41	-2.22

**TABLE B4. REGRESSION ANALYSIS OF COAL PRODUCTION (IN TONS)
VERSUS PER CAPITA INCOME, SELECTED YEARS 1959-1972.**

COUNTY	ANNUAL COAL PRODUCTION		PER CAPITA INCOME		EQUATION	SQUARED CORRELATION COEFFICIENT	T-VALUE
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION			
Breathitt	1,855,792.60	1,339,571.00	\$ 945.00	\$ 256.48	604.78 + 0.00018 ACP = PCI	0.92	7.42
Knott	2,744,538.00	822,851.04	906.29	398.65	-261.16 + 0.00043 ACP = PCI	0.77	4.10
Letcher	6,294,919.10	757,646.71	1,685.86	630.83	-999.32 + 0.043 ACP = PCI	0.26	1.33
Magoffin	342,352.00	318,041.41	911.57	200.17	705.47 + 0.00060 ACP = PCI	0.96	7.33
Perry	5,236,962.60	1,648,793.10	1,525.29	508.32	17.57 + 0.00029 ACP = PCI	0.93	5.84

**TABLE B5. REGRESSION ANALYSIS OF MINING INCOME VERSUS PERSONAL INCOME
(BOTH IN \$1,000), SELECTED YEARS 1959-1972.**

COUNTY	ANNUAL MINING INCOME		PERSONAL INCOME		EQUATION	SQUARED CORRELATION COEFFICIENT	T-VALUE
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION			
Breathitt	\$ 1,539.25	\$ 713.76	\$ 13,991.00	\$ 3,963.16	8,973.81 + 3.26 AMI = PI	0.34	1.78
Knott	3,022.10	2,036.41	13,586.70	4,902.07	6,773.72 + 2.25 AMI = PI	0.88	7.56
Letcher	20,663.00	6,921.43	45,507.40	14,465.55	2,760.84 + 2.07 AMI = PI	0.98	19.70
Magoffin	675.80	147.58	9,521.20	2,365.73	13,097.42 - 5.29 AMI = PI	0.11	-0.99
Perry	13,808.50	5,631.69	51,050.00	14,404.31	19,315.47 + 2.30 AMI = PI	0.81	5.79

Figure B1. Regression Analysis Plot of Manufacturing Income versus Personal Income (Breathitt County), Selected Years 1959-1972.

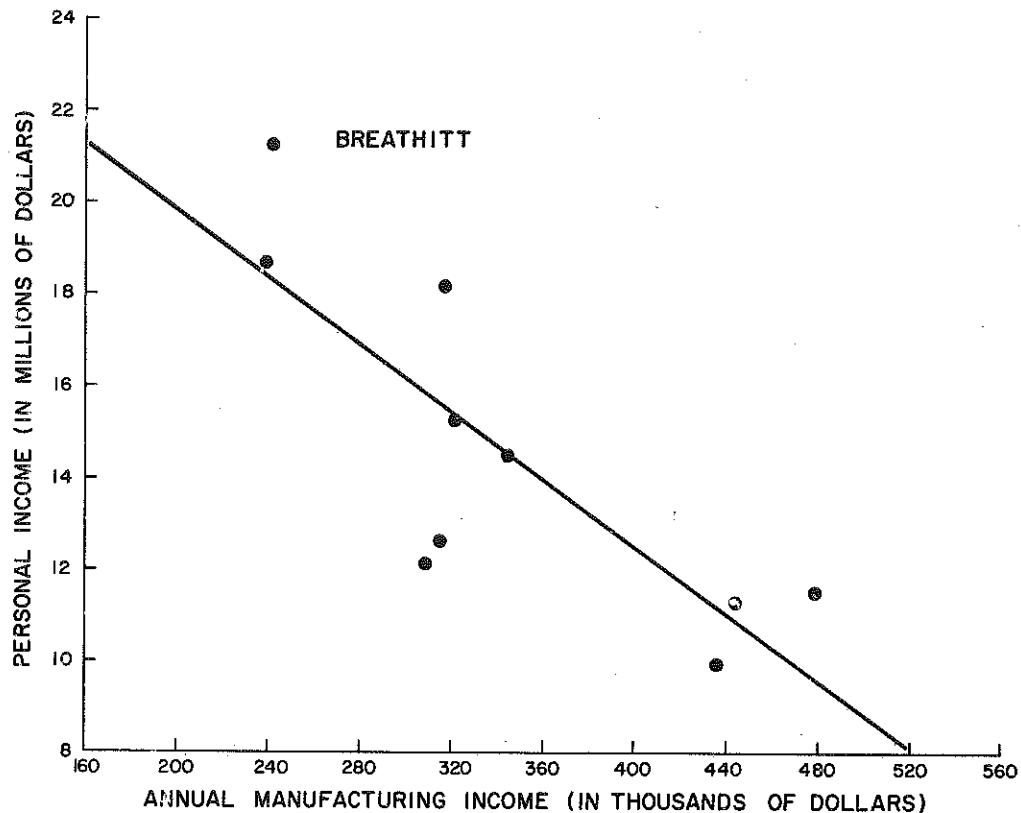


Figure B2. Regression Analysis Plot of Manufacturing Income versus Personal Income (Magoffin County), Selected Years 1959-1972.

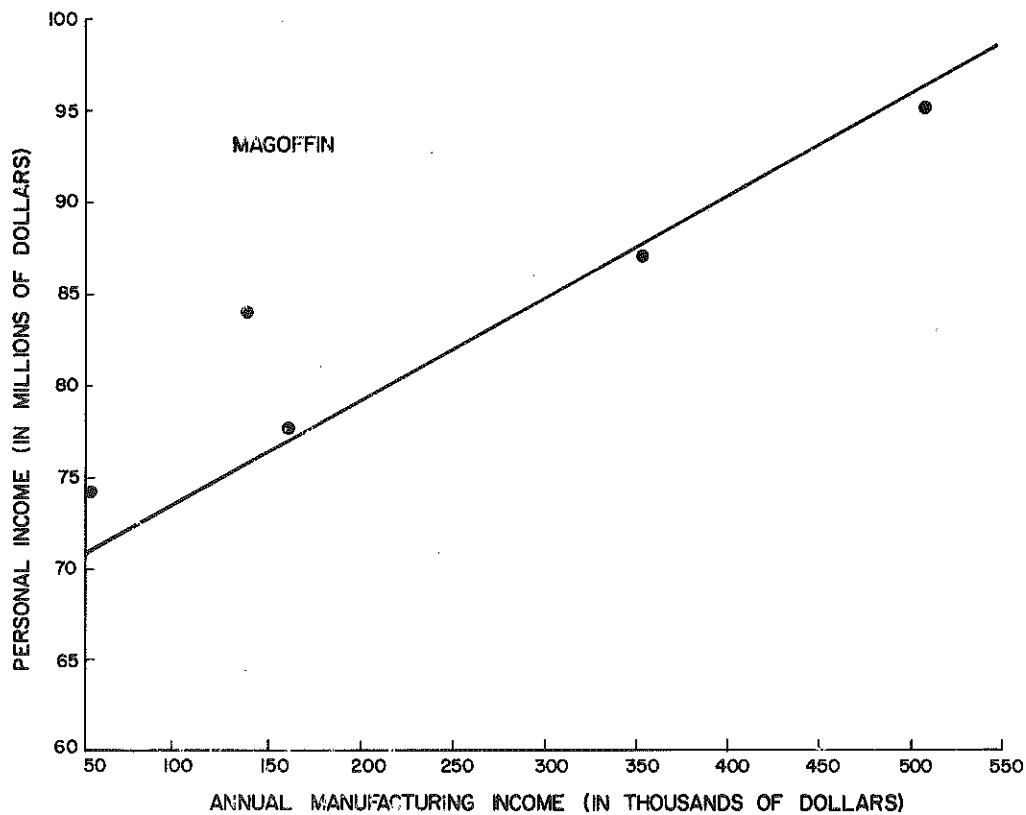


Figure B3. Regression Analysis Plot of Manufacturing Income versus Personal Income (Morgan County), Selected Years 1959-1972.

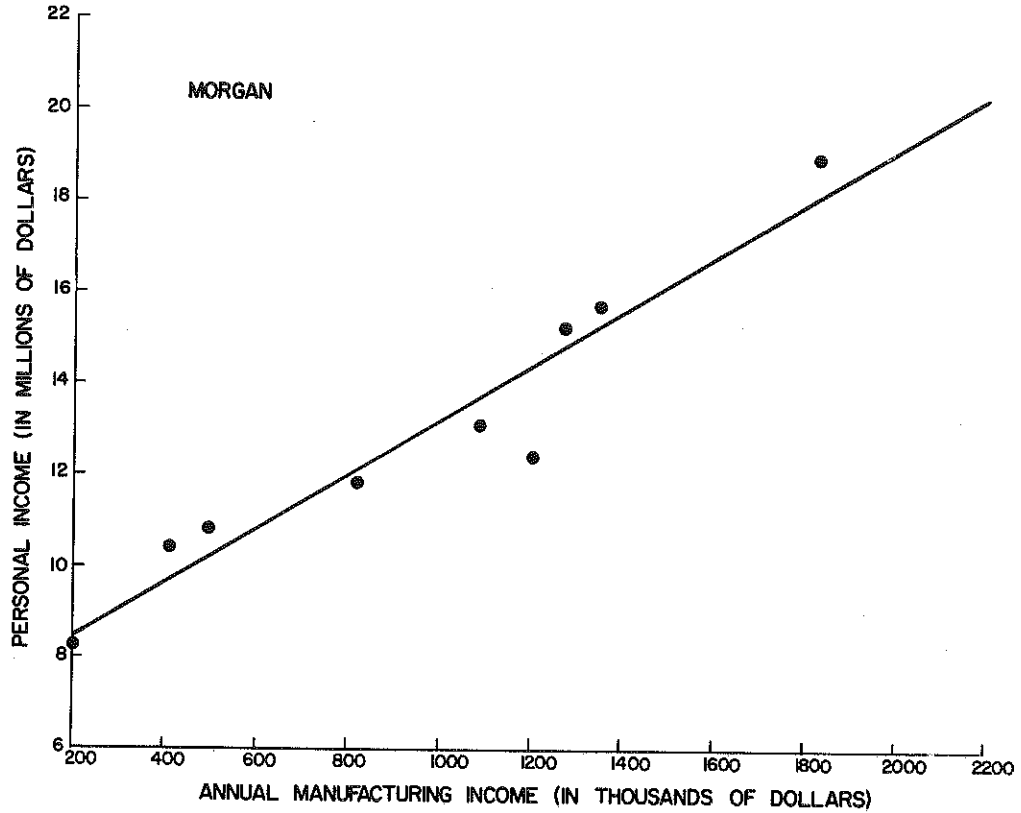


Figure B4. Regression Analysis Plot of Manufacturing Income versus Personal Income (Perry County), Selected Years 1959-1972.

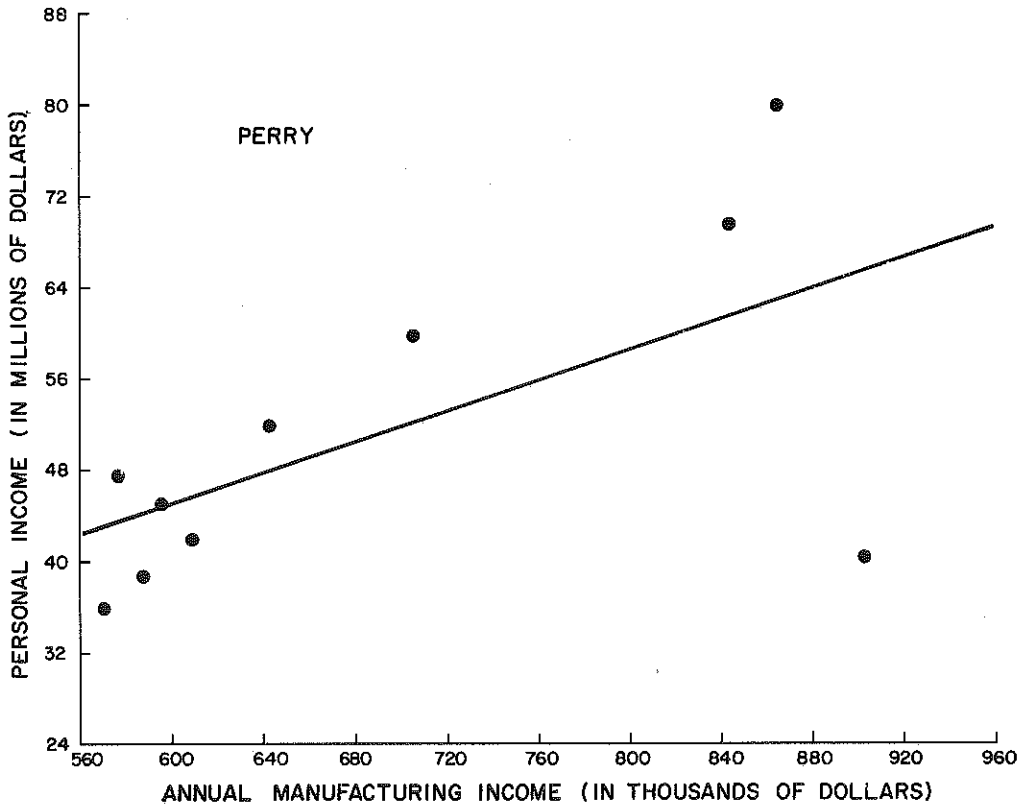


Figure B5. Regression Analysis Plot of Manufacturing Income versus Personal Income (Powell County), Selected Years 1959-1972.

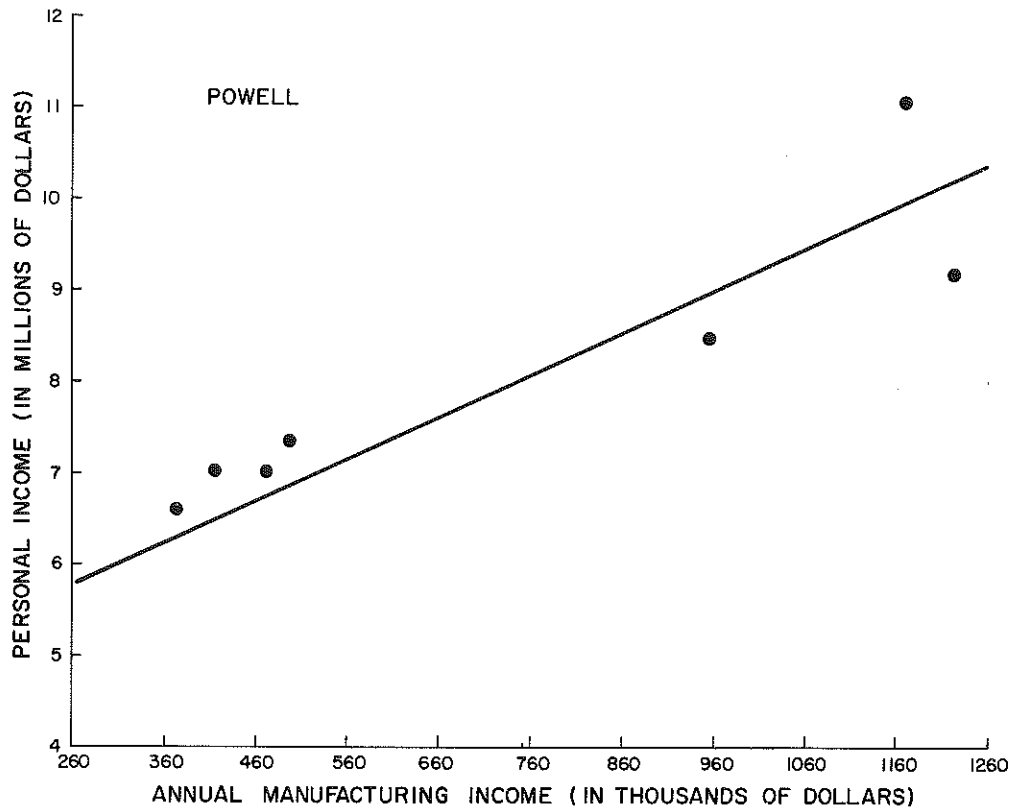


Figure B6. Regression Analysis Plot of Mining and Quarrying Employment versus Per Capita Income (Breathitt County), Selected Years 1959-1972.

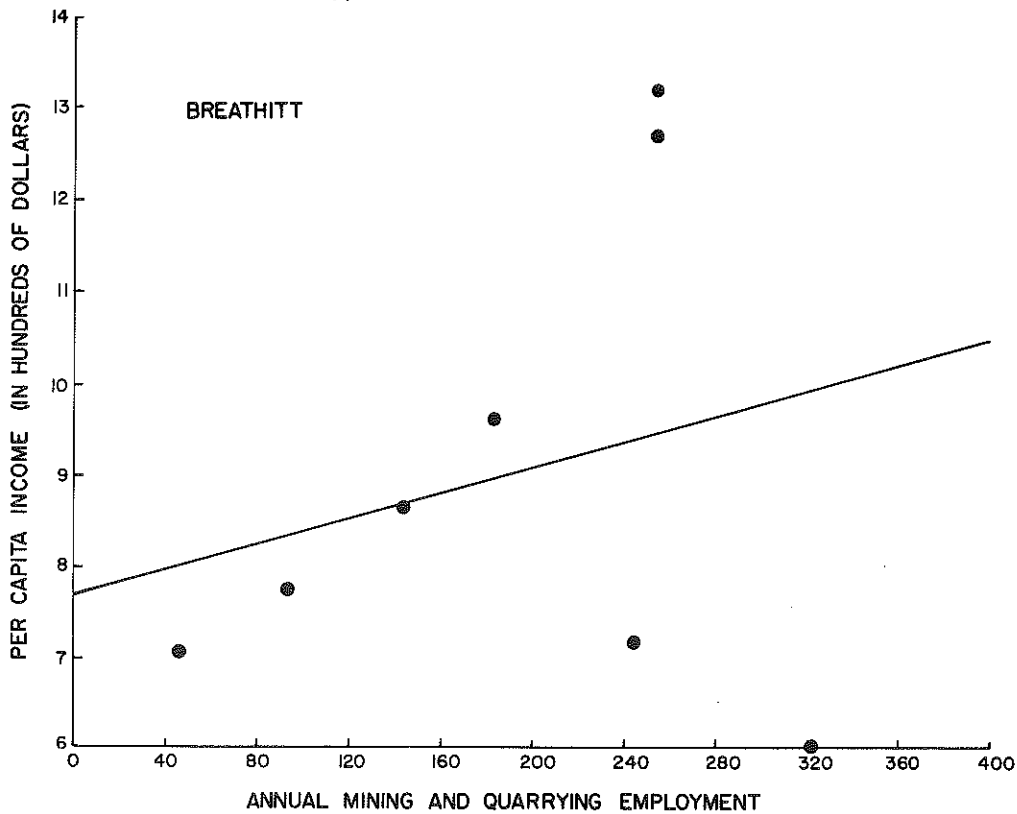


Figure B7. Regression Analysis Plot of Mining and Quarrying Employment versus Per Capita Income (Knott County), Selected Years 1959-1972.

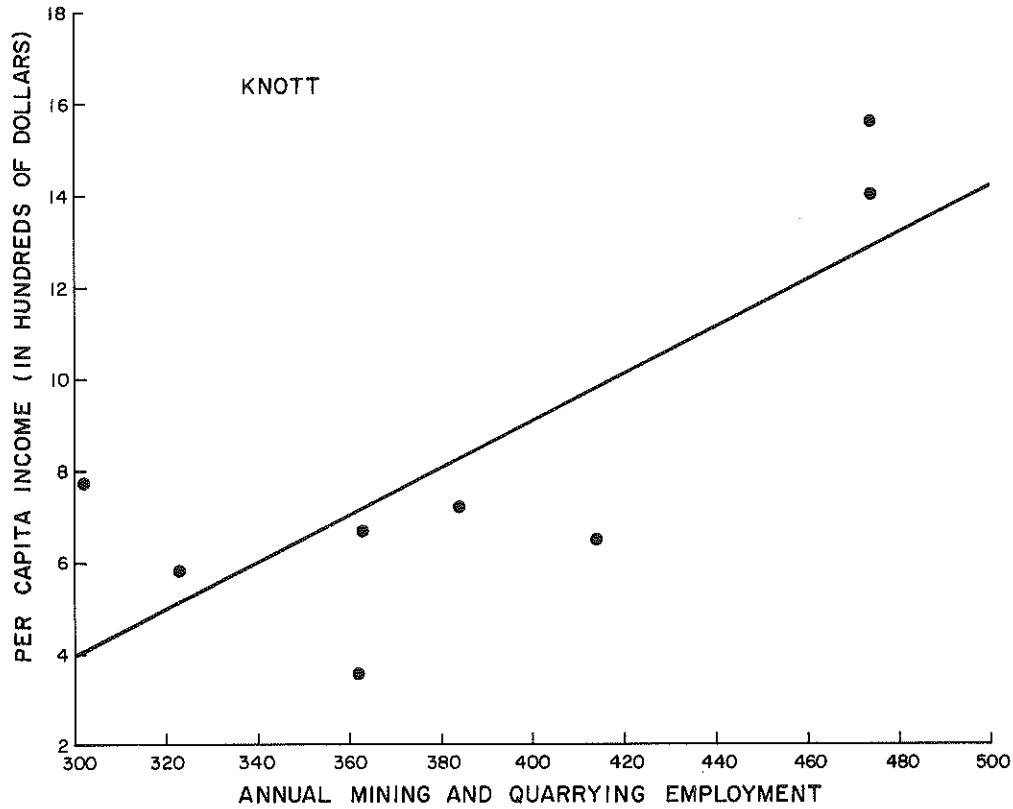


Figure B8. Regression Analysis Plot of Mining and Quarrying Employment versus Per Capita Income (Letcher County), Selected Years 1959-1972.

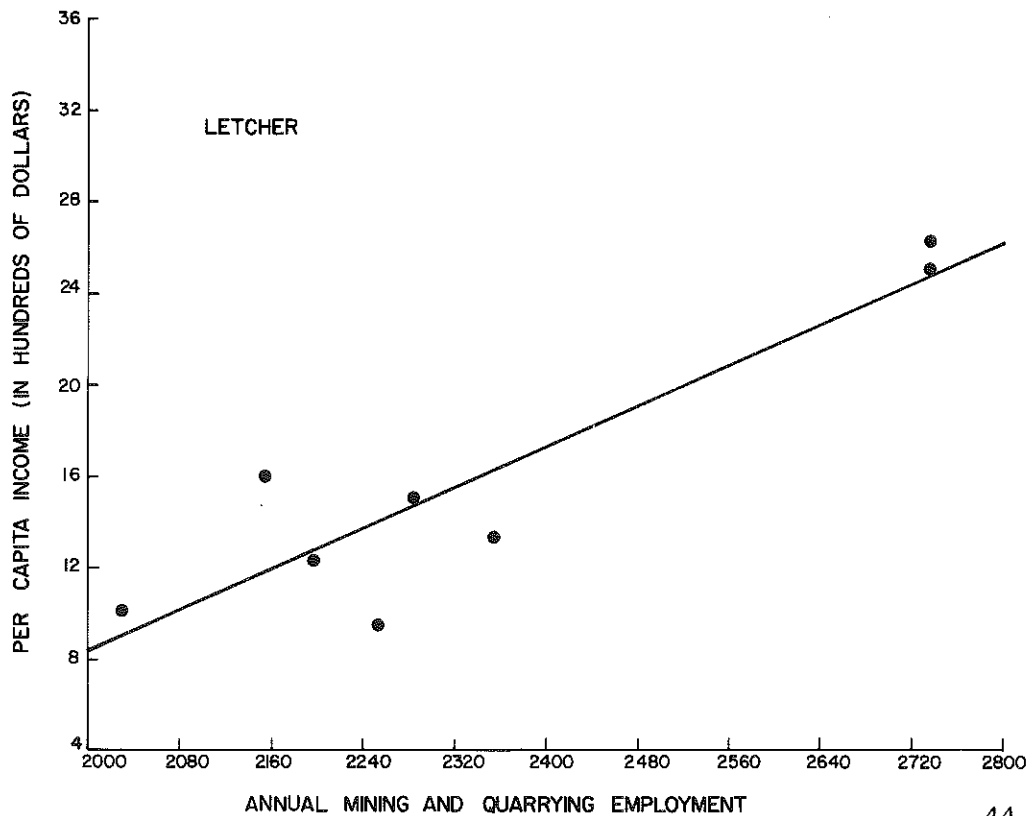


Figure B9. Regression Analysis Plot of Mining and Quarrying Employment versus Per Capita Income (Magoffin County), Selected Years 1959-1972.

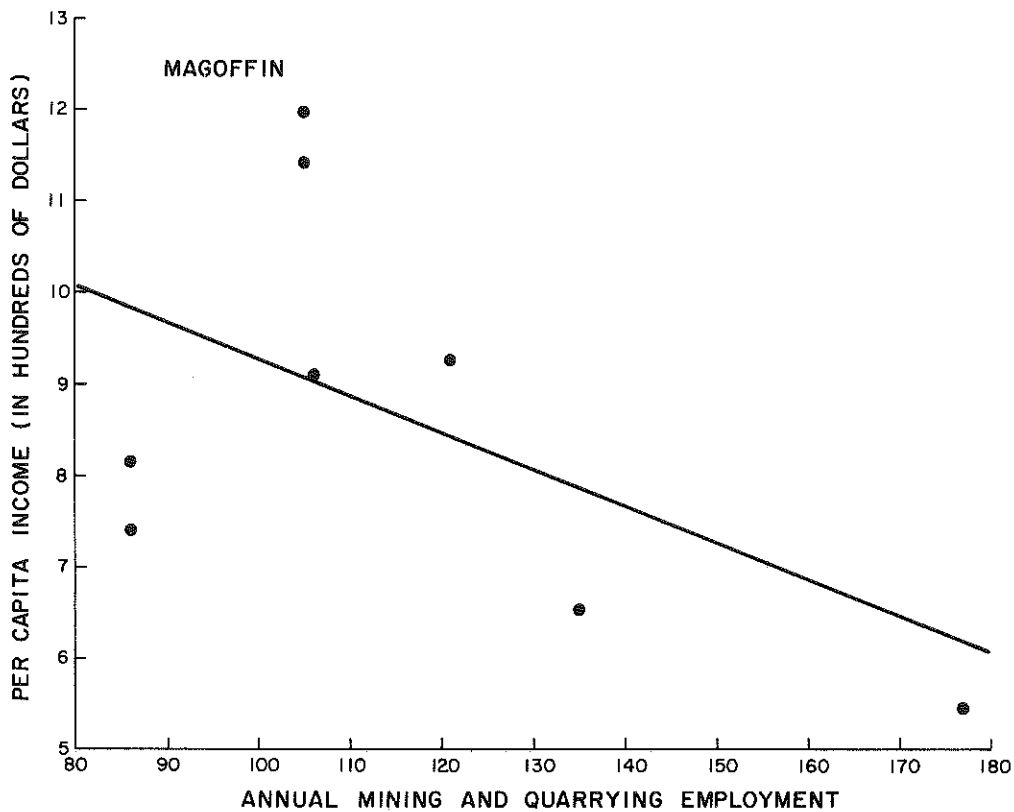


Figure B10. Regression Analysis Plot of Mining And Quarrying Employment versus Per Capita Income (Perry County), Selected Years 1959-1972.

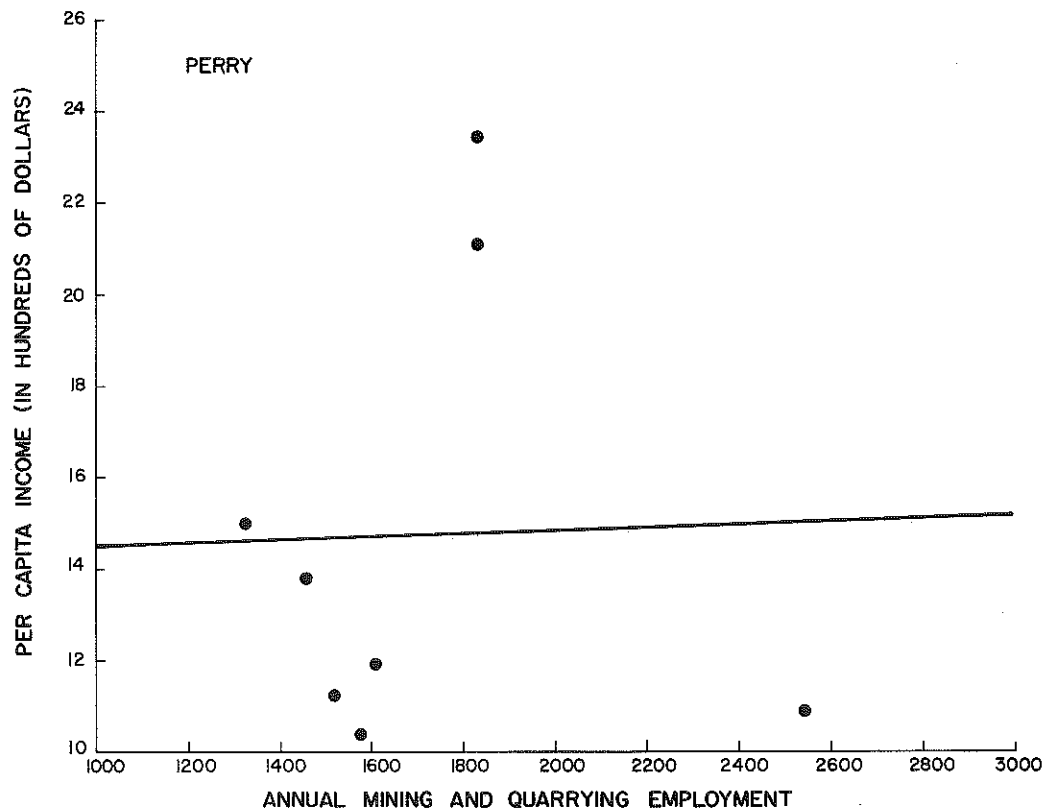


Figure B11. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Breathitt County), Selected Years 1950-1971.

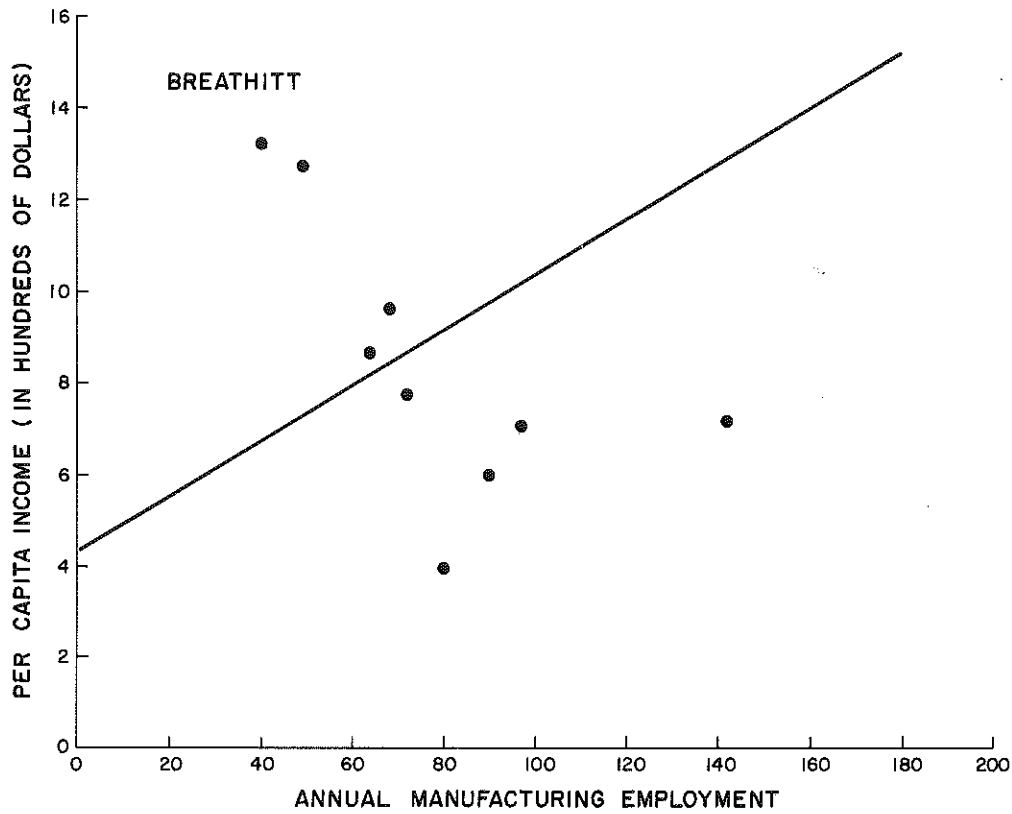


Figure B12. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Knott County), Selected Years 1950-1971.

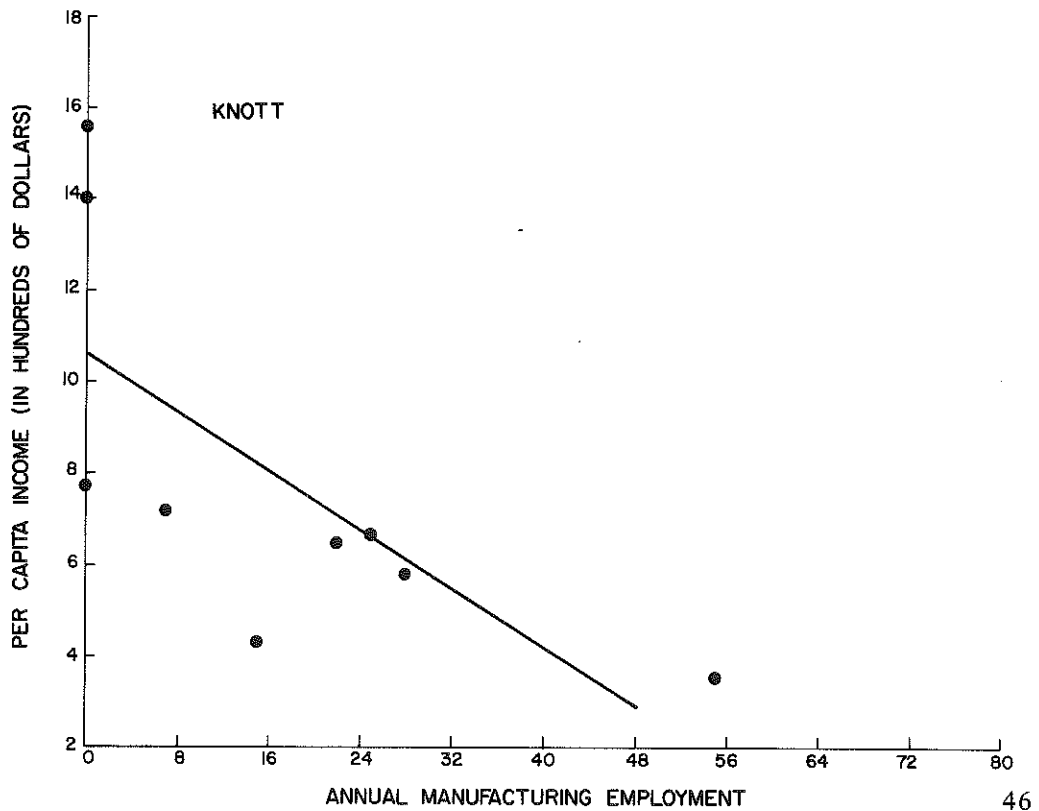


Figure B13. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Letcher County), Selected Years 1950-1971.

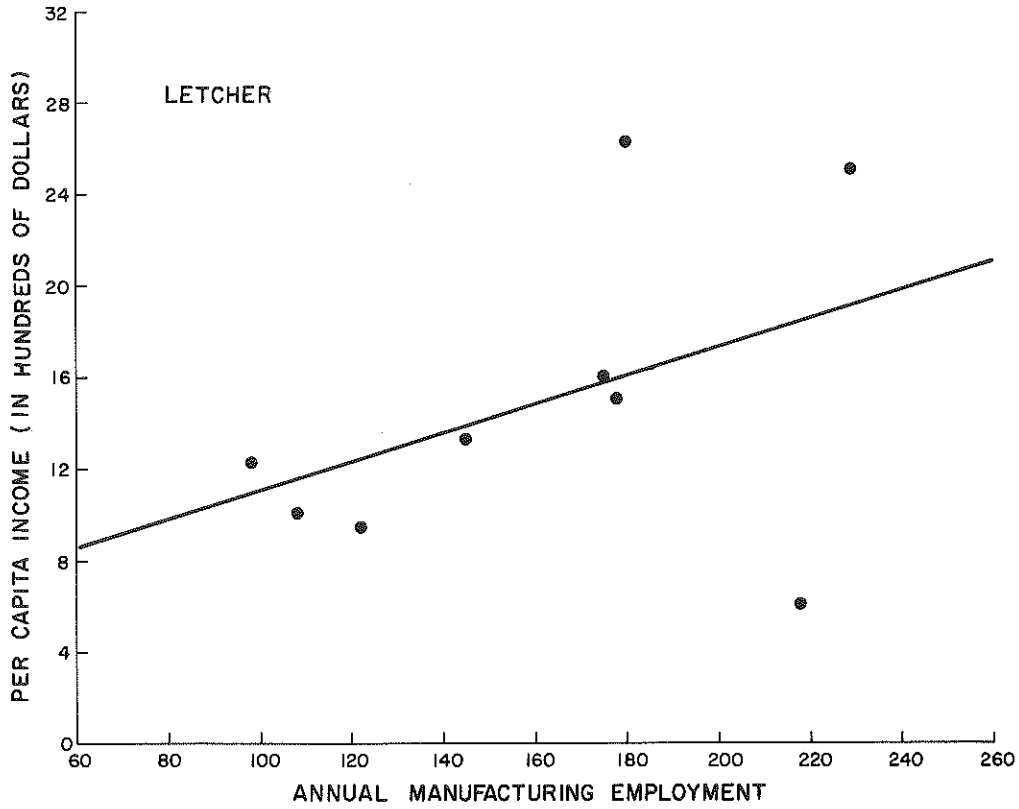


Figure B14. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Magoffin County), Selected Years 1950-1971.

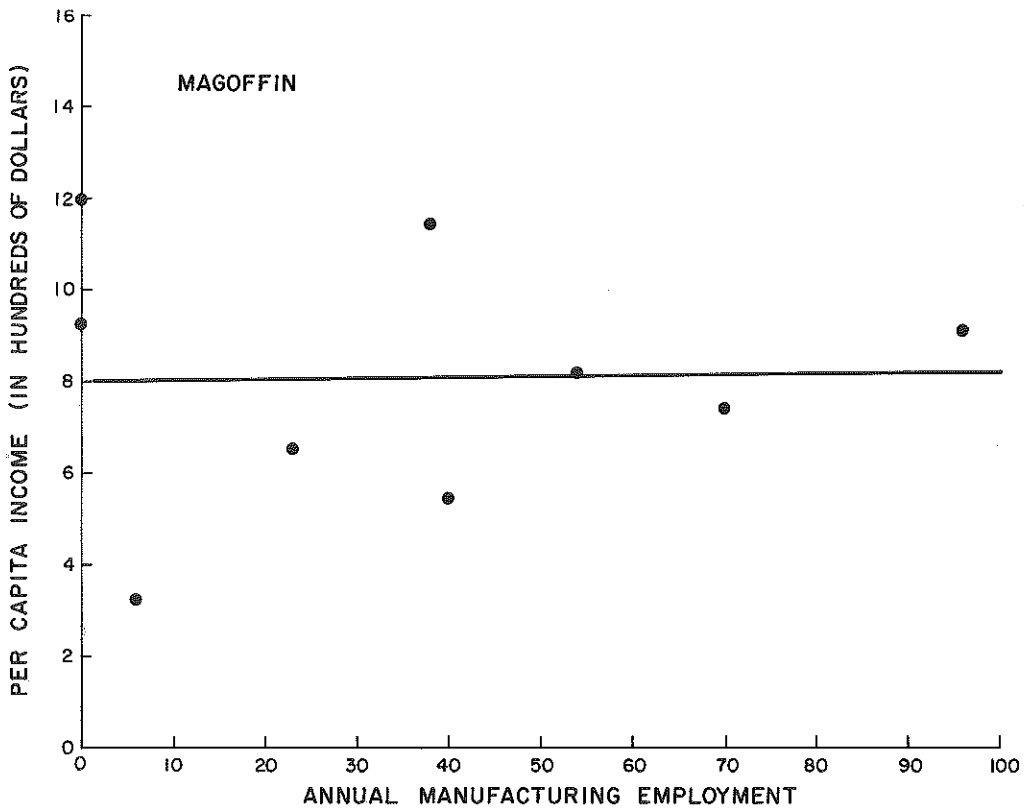


Figure B15. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Menifee County), Selected Years 1950-1971.

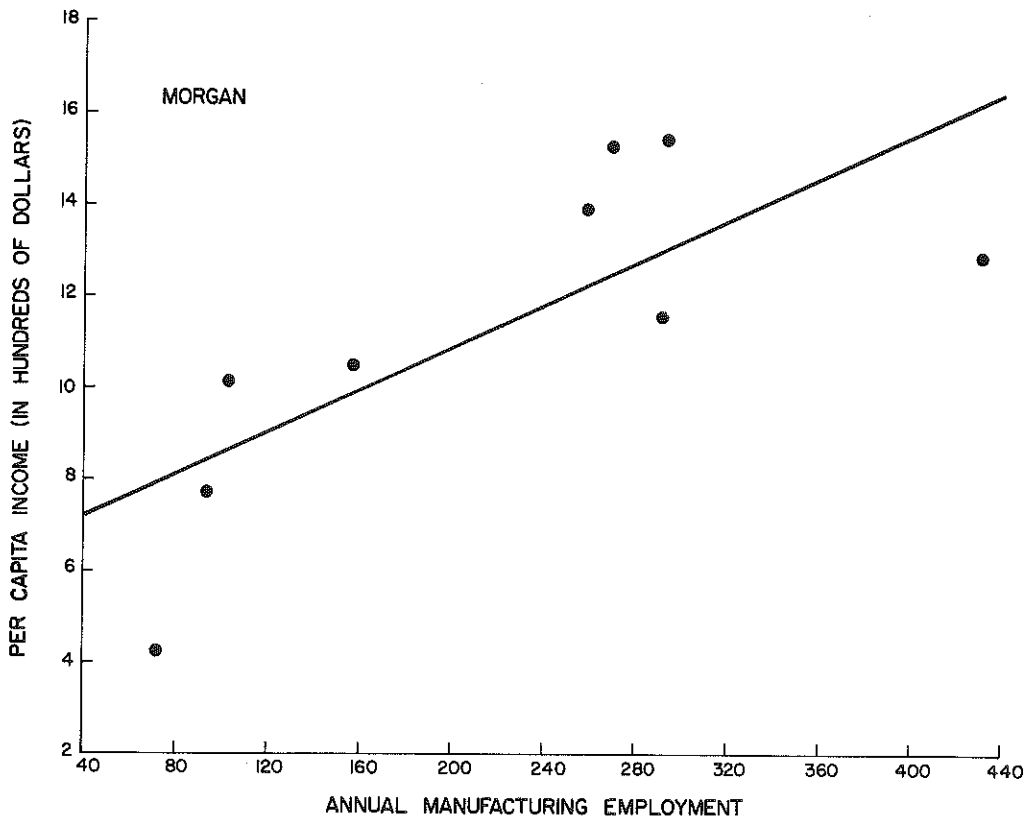
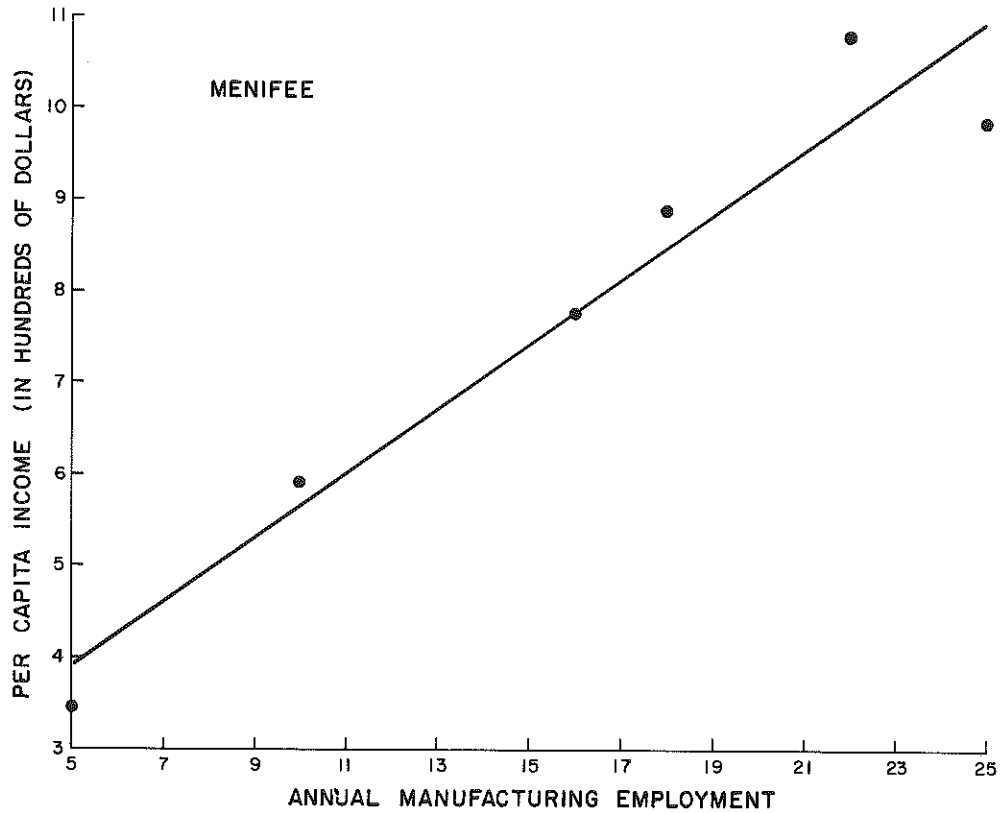


Figure B16. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Morgan County), Selected Years 1950-1971.

Figure B17. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Perry County), Selected Years 1950-1971.

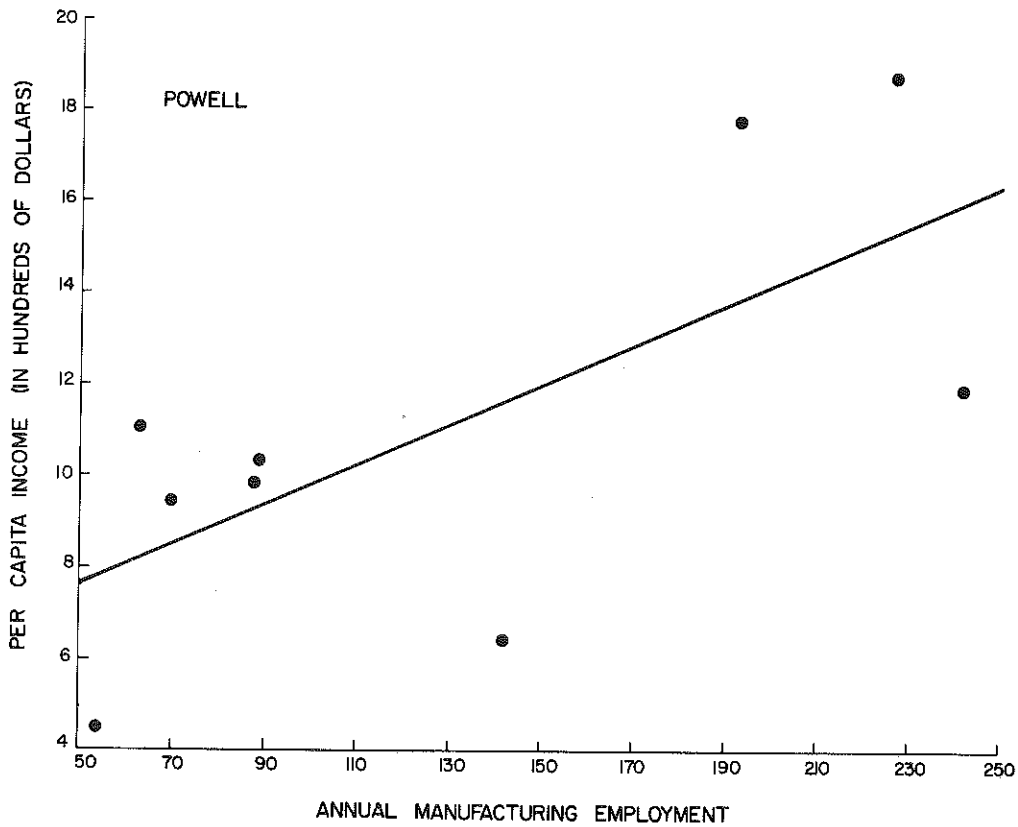
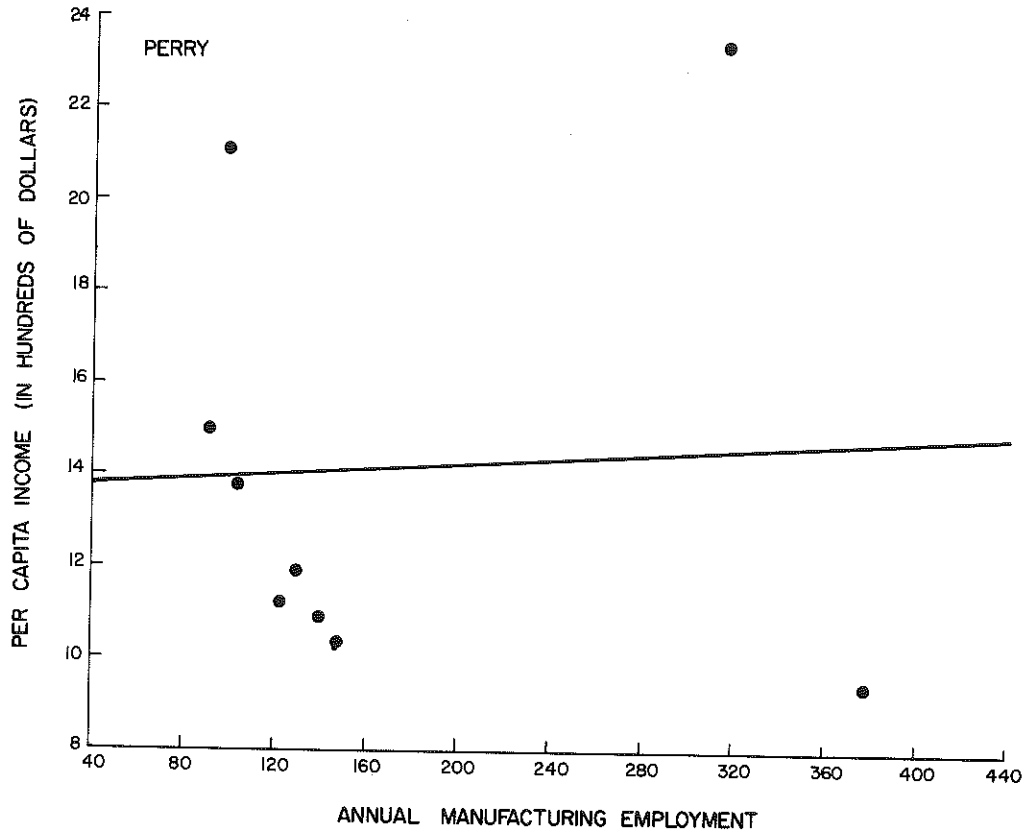


Figure B18. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Powell County), Selected Years 1950-1971.

Figure B19. Regression Analysis Plot of Manufacturing Employment versus Per Capita Income (Wolfe County), Selected Years 1950-1971.

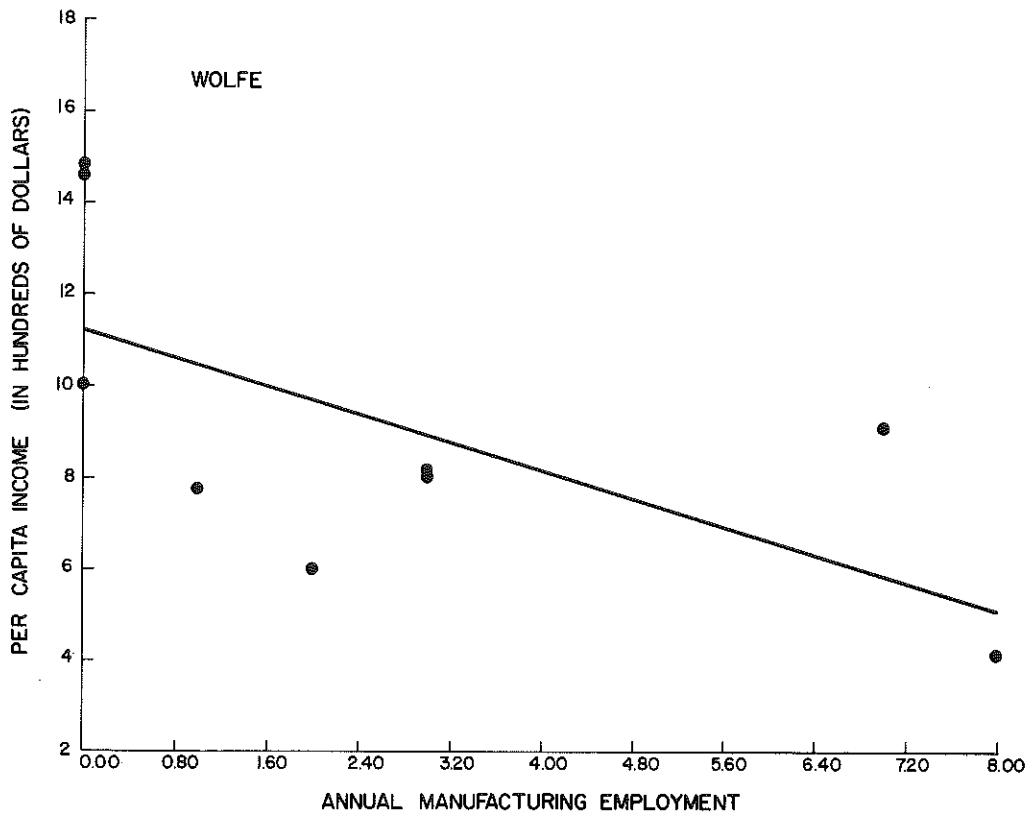


Figure B20. Regression Analysis Plot of Coal Production versus Per Capita Income (Breathitt County), Selected Years 1962-1971.

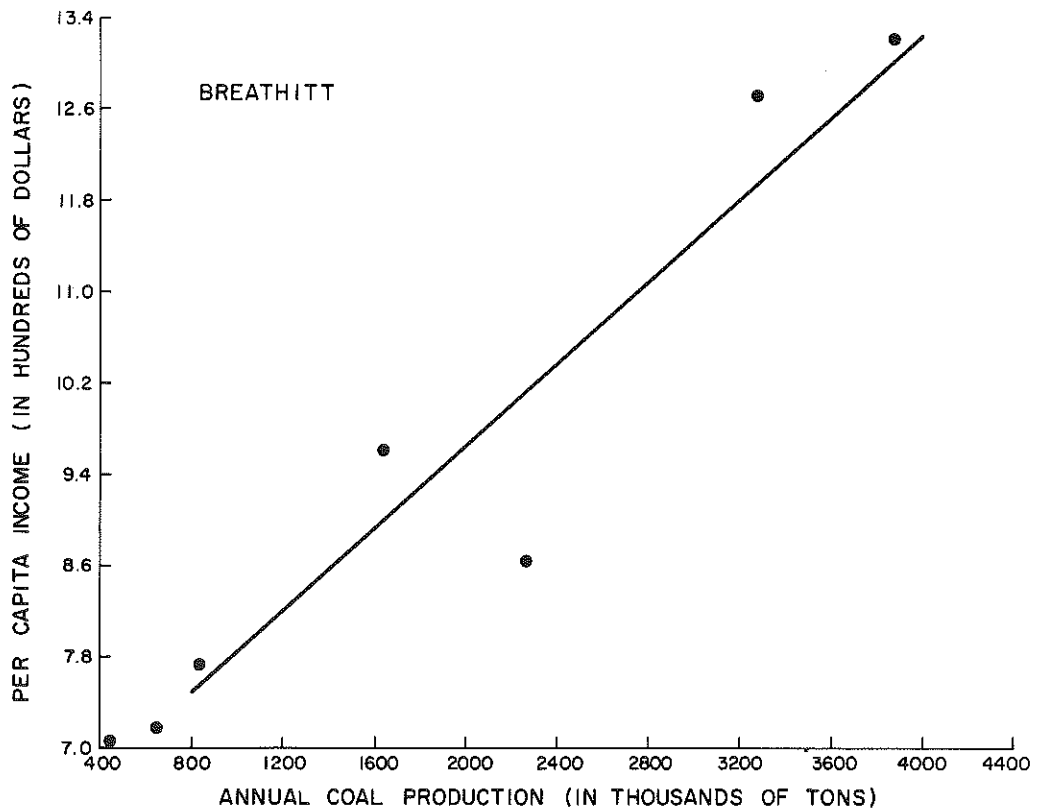


Figure B21. Regression Analysis Plot of Coal Production versus Per Capita Income (Knott County), Selected Years 1962-1971.

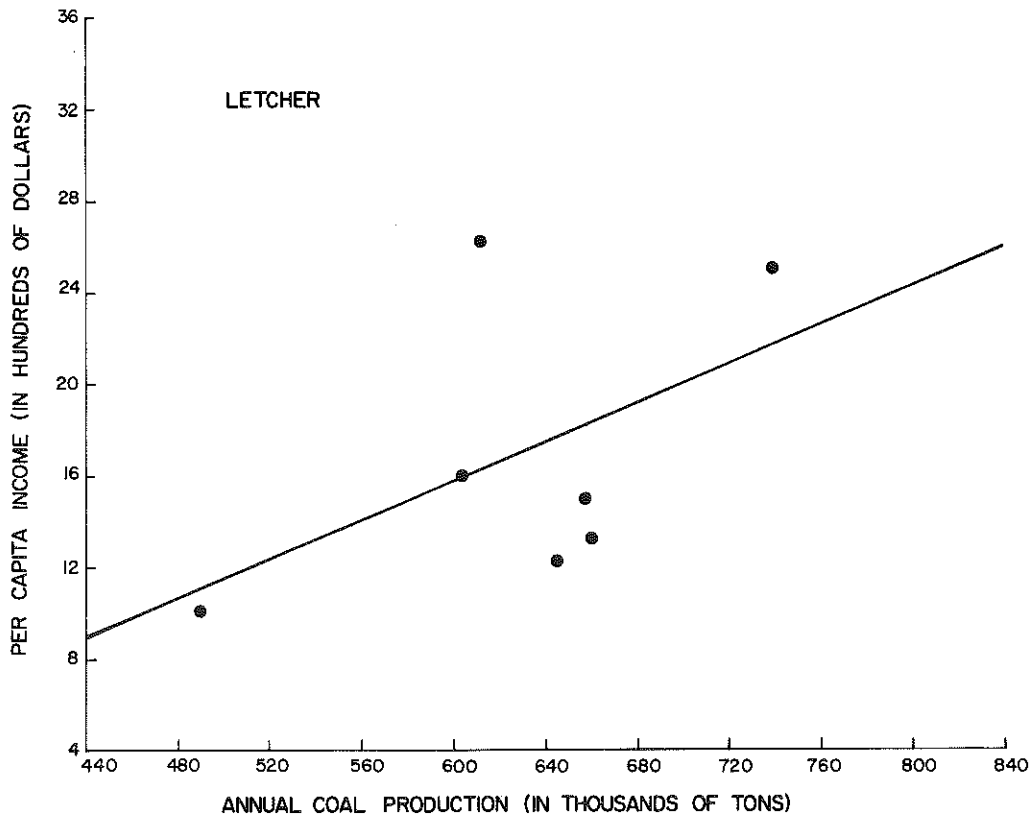
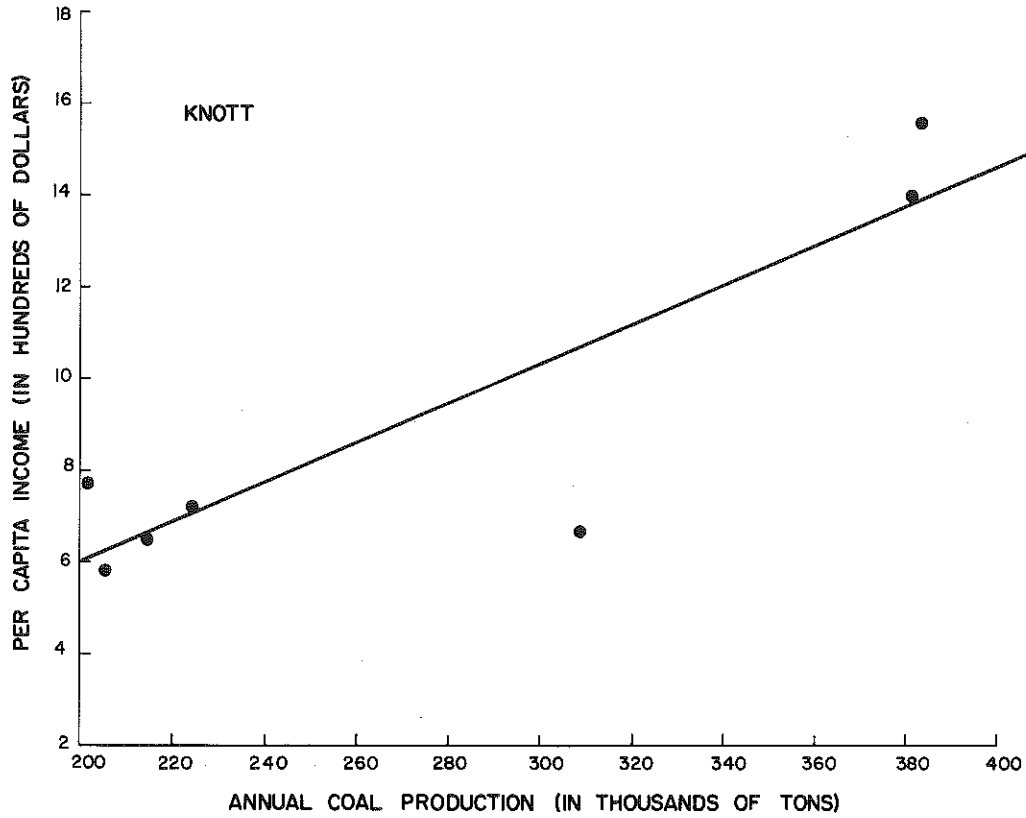


Figure B22. Regression Analysis Plot of Coal Production versus Per Capita Income (Letcher County), Selected Years 1962-1971.

Figure B23. Regression Analysis Plot of Coal Production versus Per Capita Income (Magoffin County), Selected Years 1962-1971.

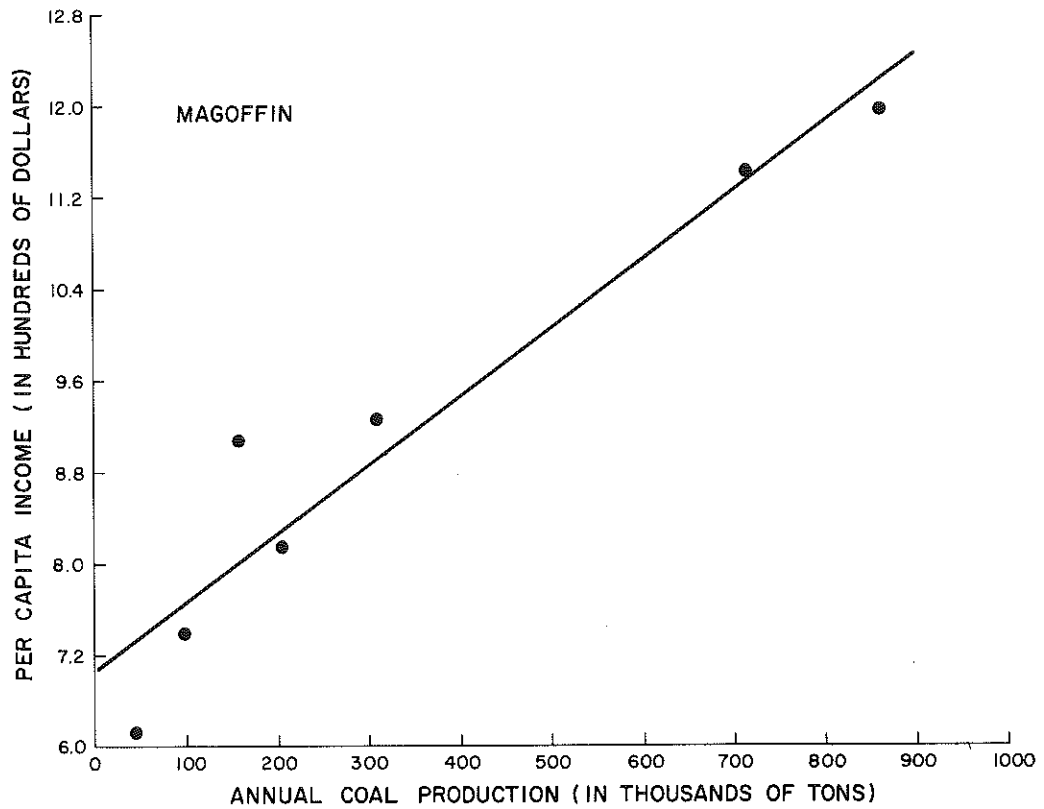


Figure B24. Regression Analysis Plot of Coal Production versus Per Capita Income (Perry County), Selected Years 1962-1971.

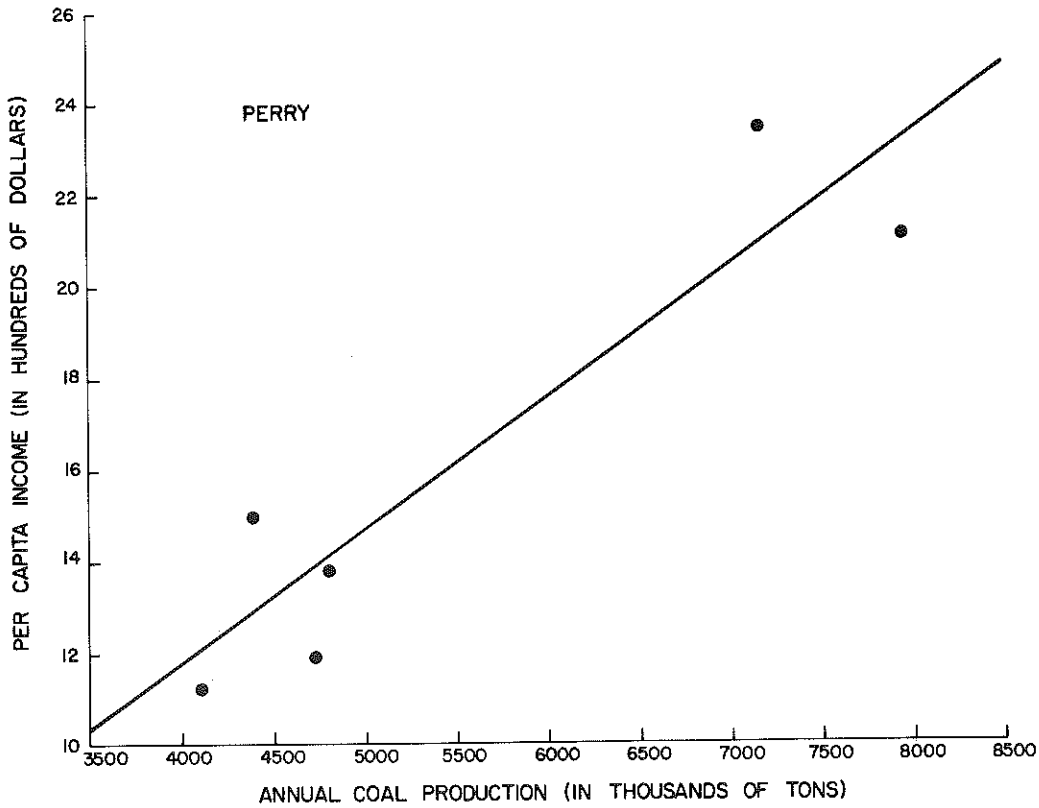


Figure B25. Regression Analysis Plot of Mining Income versus Personal Income (Breathitt County), Selected Years 1959-1972.

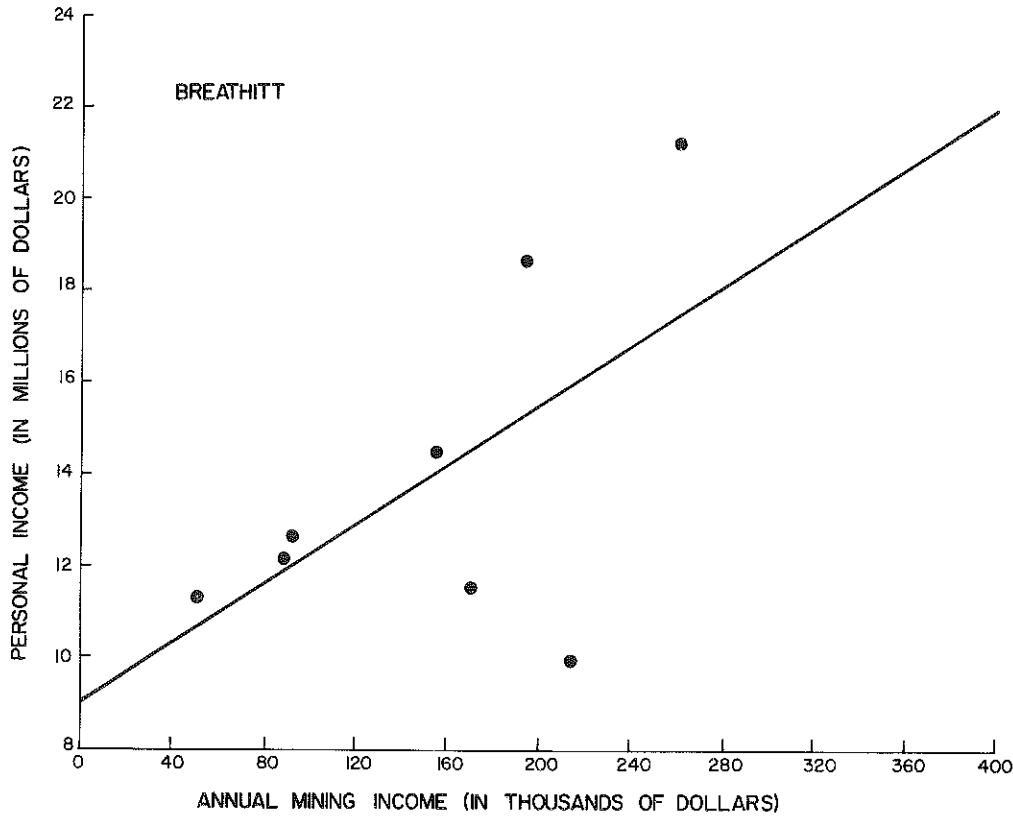


Figure B26. Regression Analysis Plot of Mining Income versus Personal Income (Knott County), Selected Years 1959-1972.

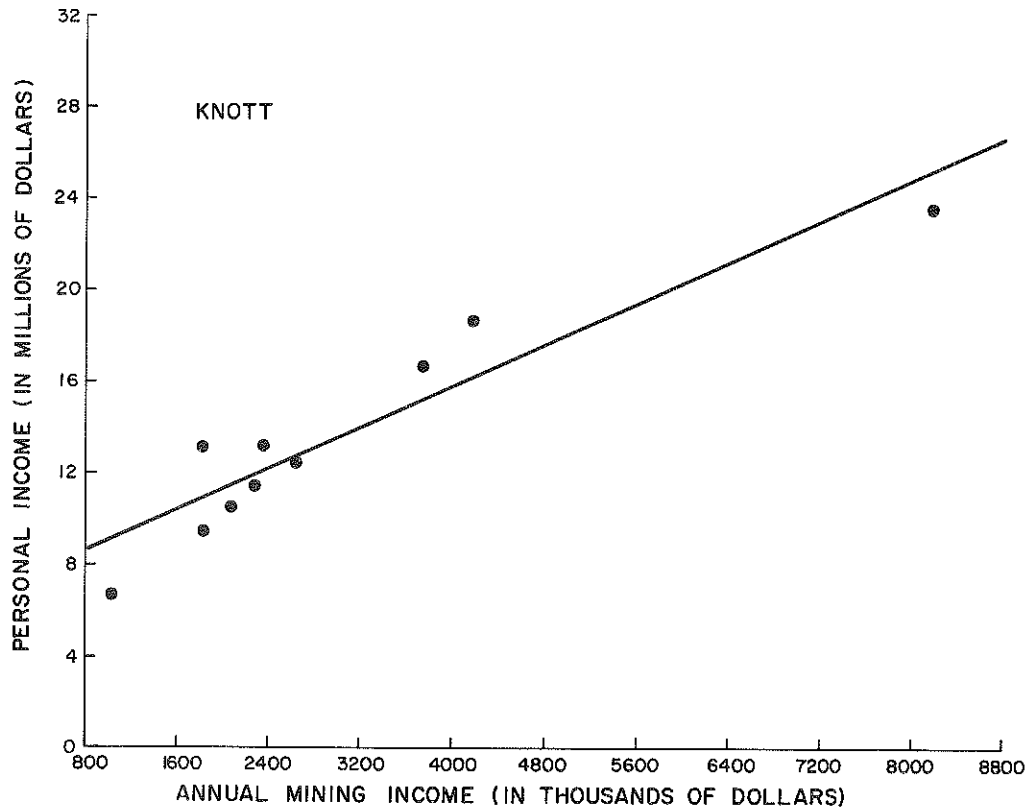


Figure B27. Regression Analysis Plot of Mining Income versus Personal Income (Letcher County), Selected Years 1959-1972.

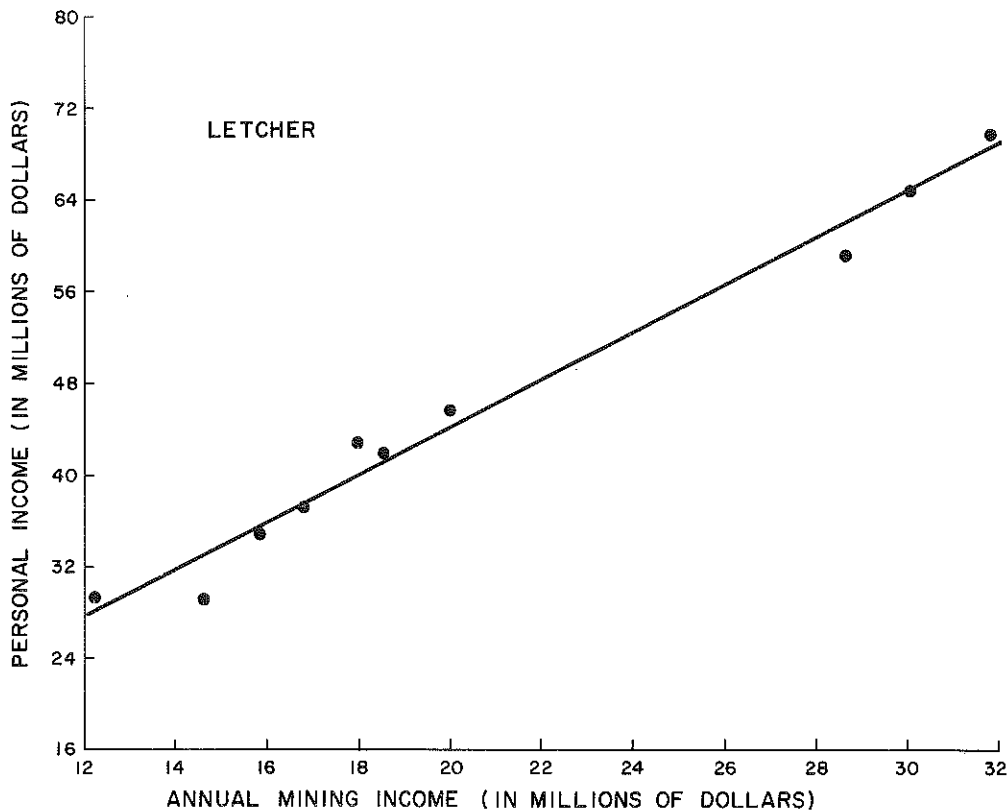
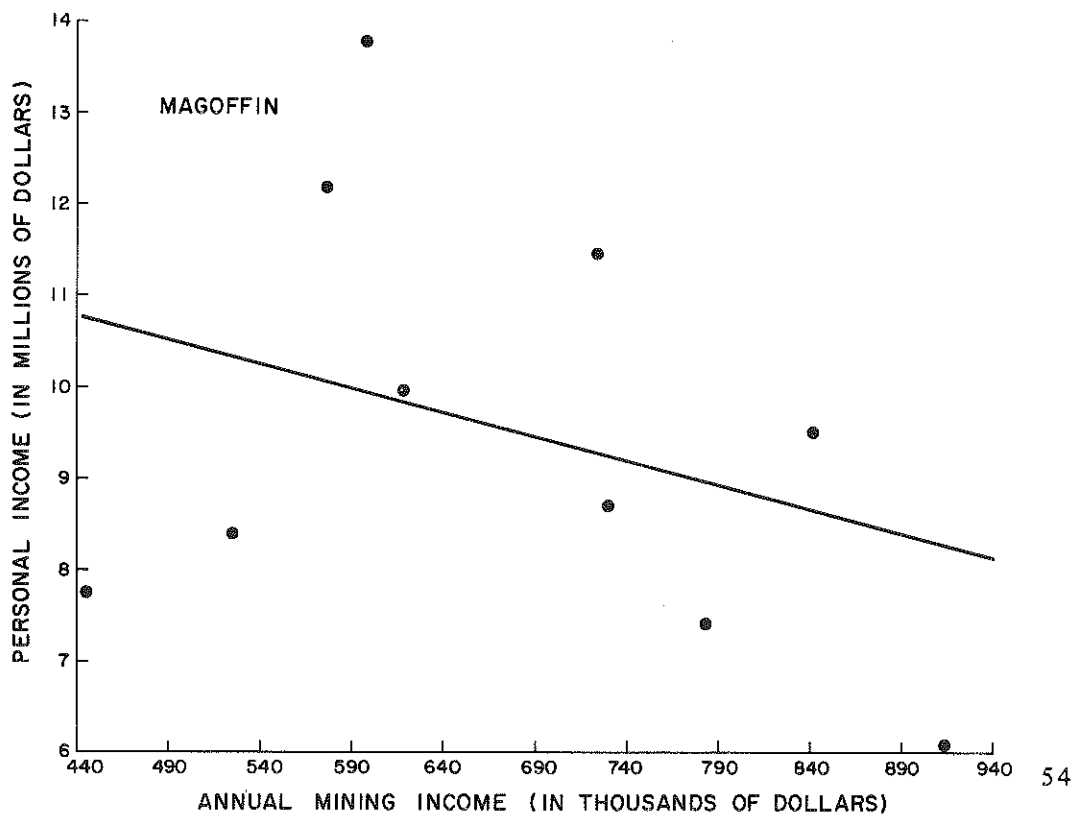


Figure B28. Regression Analysis Plot of Mining Income versus Personal Income (Magoffin County), Selected Years 1959-1972.



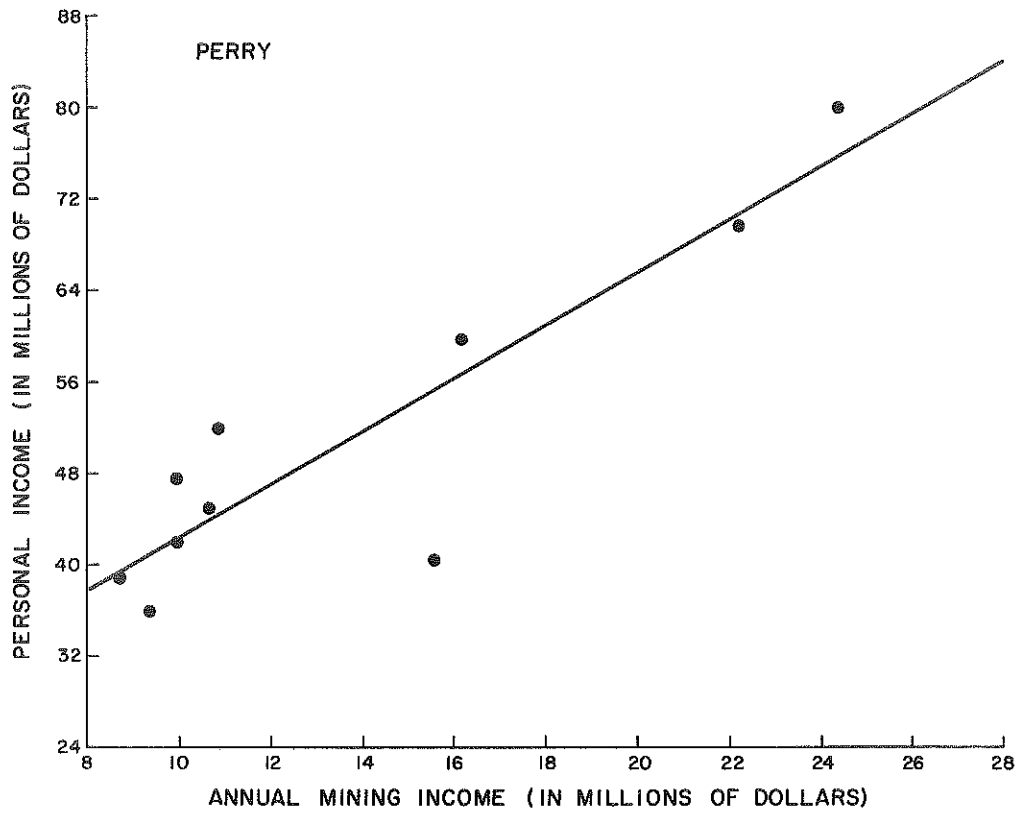


Figure B29. Regression Analysis Plot of Mining Income versus Personal Income (Perry County), Selected Years 1959-1972.

APPENDIX C

EMPLOYMENT ANALYSIS

A chi-square analysis was run to see if 1970 employment per total population was greater than that for 1960. Using census information already mentioned, the following formula was utilized:

$$x^2 = \frac{[n(r_a S_b - r_b S_a' - 2)]^2}{N_a r N_b S}$$

where r_a = number of employed 1960,
 s_a = number not employed 1960,
 N_a = population 1960,
 r_b = number employed 1970,
 S_b = number not employed 1970,
 N_b = population 1970,
 r = total employed,
 S = total not employed, and
 N = total population.

Critical values for chi-square (x^2) at the 0.95-level of significance is $x^2 = 2.71$; at the 0.975-level of significance, $x^2 = 3.84$. The resulting chi-square values for the respective counties were as follows:

Breathitt	-	110.305	(1970 ratio greater at both levels of significance)
Knott	-	83.193	(1970 ratio greater at both levels of significance)
Letcher	-	27.926	(1970 ratio greater at both levels of significance)
Magoffin	-	1.091	(1970 ratio not greater at either level)
Menifee	-	2.176	(1970 ratio not greater at either level)
Perry	-	84.275	(1970 ratio greater at both levels of significance)
Powell	-	19.195	(1970 ratio greater at both levels of significance)
Wolfe	-	7.802	(1960 ratio was significantly greater than at both levels 1970)

APPENDIX D

**EMPLOYMENT BY MAJOR SECTOR
(SELECTED YEARS 1950-1973)**

TABLE D1. WORKERS COVERED BY KENTUCKY UNEMPLOYMENT INSURANCE LAW
BY COUNTY, FOR DECEMBER OF EACH YEAR^a

COUNTY	MINING AND QUARRYING	MANUFACTURING	WHOLESALE AND RETAIL TRADE	SERVICES	AGRICULTURE
1973					
Breathitt	312	60	412	324	330
Knott	1,028		164	353	10
Letcher	2,628	148	740	528	80
Magoffin	122	157	187	100	230
Menifee	0	31	44	15	320
Morgan	40	389	353	165	800
Perry	2,142	88	1,327	1,309	90
Powell		86	133	46	220
Wolfe			109	109	510
1971					
Breathitt	194	40	240	45	370
Knott	505		135	37	20
Letcher	2,665	180	583	136	100
Magoffin	83		99	53	270
Menifee	0		19		340
Morgan		294	269	49	860
Perry	2,140	98	967	316	100
Powell		227	114	15	270
Wolfe			55	38	570
1970					
Breathitt	254	49	231	46	400
Knott	474		75	48	100
Letcher	2,737	229	574	124	100
Magoffin	105	38	102	46	300
Menifee	0				400
Morgan		270	234	48	900
Perry	1,835	98	1,003	307	100
Powell	24	193	92		300
Wolfe			61	34	600
1968					
Breathitt	183	68	181	47	455
Knott	302	0	70	46	121
Letcher	2,155	175	549	226	121
Magoffin	121	0	92	0	334
Menifee	0	0	0	0	424
Morgan	28	259	215	51	1,057
Perry	1,326	91	940	366	121
Powell	22	242	83		334
Wolfe			55	36	693

COUNTY	MINING AND QUARRYING	MANUFACTURING	WHOLESALE AND RETAIL TRADE	SERVICES	AGRICULTURE
1967					
Breathitt	144	64	178	49	482
Knott	384	7	50	41	38
Letcher	2,285	178	598	216	130
Magoffin	106	96	99	60	352
Menifee	0	22	25	10	443
Morgan	43	431	232	47	1,109
Perry	1,460	104	911	305	130
Powell	43	63	70	13	352
Wolfe	2	7	50	44	726
1966					
Breathitt	93	72	200	53	NA
Knott	363	25	43	46	NA
Letcher	2,355	145	604	176	NA
Magoffin	86	54	78	40	NA
Menifee	0	25	20	12	NA
Morgan	59	292	208	78	NA
Perry	1,610	130	910	317	NA
Powell	46	89	76	11	NA
Wolfe	2	3	52	45	NA
1965					
Breathitt	46	97	187	10	NA
Knott	414	22	43	5	NA
Letcher	2,198	98	604	139	NA
Magoffin	86	70	104	8	NA
Menifee	0	18	9	6	NA
Morgan	52	157	203	50	NA
Perry	1,520	123	883	268	NA
Powell	40	88	90	10	NA
Wolfe	12	3	31	47	NA
1962					
Breathitt	244	142	164	8	NA
Knott	323	28	20	0	NA
Letcher	2,030	108	556	279	NA
Magoffin	135	23	85	9	NA
Menifee	0	16	4	3	NA
Morgan	79	103	202	49	NA
Perry	1,578	148	829	460	NA
Powell	58	70	69	21	NA
Wolfe	18	1	34	6	NA

COUNTY	MINING AND QUARRYING	MANUFACTURING	WHOLESALE AND RETAIL TRADE	SERVICES	AGRICULTURE
1960					
Breathitt	302	85	135	12	NA
Knott	465	15	24	4	NA
Letcher	2,153	127	551	275	NA
Magoffin	161	33	71	9	NA
Menifee	4	6	0	0	NA
Morgan	118	108	216	43	NA
Perry	2,491	144	803	479	NA
Powell	42	147	49	12	NA
Wolfe	35	1	15	21	NA
1959					
Breathitt	322	90	118	11	NA
Knott	362	15	23	4	NA
Letcher	2,254	122	558	79	NA
Magoffin	177	40	75	8	NA
Menifee	1	10	1	0	NA
Morgan	148	94	217	45	NA
Perry	2,544	140	794	259	NA
Powell	36	142	30	11	NA
Wolfe	24	2	12	21	NA
1957					
Breathitt	475	103	101	11	NA
Knott	395	18	12	8	NA
Letcher	3,022	127	538	95	NA
Magoffin	117	3	82	10	NA
Menifee	0	9	9	0	NA
Morgan	108	53	226	48	NA
Perry	3,560	163	884	342	NA
Powell	33	113	36	9	NA
Wolfe	34	9	9	16	NA
1950					
Breathitt	288	80	53	24	NA
Knott	542	55	22	26	NA
Letcher	4,160	218	456	100	NA
Magoffin	132	6	34	6	NA
Menifee	0	5	3	0	NA
Morgan	178	72	176	14	NA
Perry	6,647	378	821	323	NA
Powell	18	54	0	0	NA
Wolfe	193	8	8	0	NA

^aSource: Kentucky Department for Human Resources, Division of Management Systems

APPENDIX E

BUSINESS SURVEY ALONG RURAL ROADS

To determine whether economic development or diversification had taken place within rural sections of the study area since the inception of the Parkway and KY 15, business locations in all nine counties were studied. Locations were studied along the following highways:

- Powell County - KY 15, KY 2113;
- Wolfe County - US 460, KY 191;
- Breathitt County - KY 15;
- Magoffin County - US 460, KY 7, KY 134, KY 114;
- Perry County - KY 15;
- Knott County - KY 15 (this highway traverses Knott County only a few miles (kilometers)); and
- Letcher County - KY 15.

With the exception of urban areas, the entire length of each particular highway in a county was studied. Business locations along KY 15 in Stanton and Clay City were studied because of the notable growth of these towns in terms of both population and commerce. Also sampled were all businesses along US 460 in Frenchburg in Menifee County. Frenchburg has a population of around 500 and therefore cannot be classified as urban.

Data for these locations were obtained through personal interview with owners and from the Kentucky Department of Revenue. Data prior to 1969 is slightly less accurate because the great number of turnovers and failures caused the Department of Revenue to discard data on several locations prior to that year. Tables E1 and E2 show the gross receipts and total number of businesses along these roads. A total of 206 locations at which businesses had operated or were operating were surveyed. Table E3 shows the relative importance of four major categories of businesses found along these roads.

**TABLE E1. GROSS RECEIPTS OF AND TOTAL NUMBER OF BUSINESSES SURVEYED
ALONG SPECIFIC RURAL HIGHWAYS**

COUNTY	1973		1972		1971	
	RECEIPTS	NUMBER	RECEIPTS	NUMBER	RECEIPTS	NUMBER
Powell	\$ 42,681.50	34	\$28,133.59	29	\$ 30,228.21	26
Wolfe	12,548.73	17	12,336.58	22	15,153.62	19
Magoffin	2,942.26	5	3,085.26	5	2,905.95	5
Breathitt	37,213.25	26	36,111.34	25	30,865.25	22
Perry	130,479.92	28	172,426.21	29	160,441.08	27
Knott	1,739.68	2	1,592.75	2	1,512.71	2
Letcher	32,571.47	9	24,602.28	10	26,889.93	8
Morgan	80,864.28	33	109,288.90	42	102,568.05	40
Menifee	9,854.54	14	12,604.05	20	6,911.26	13
Total	350,895.63	168	400,180.96	184	377,476.06	162
Average Receipts	208,866.45		217,489.65		233,009.91	

COUNTY	1970		1969		1968	
	RECEIPTS	NUMBER	RECEIPTS	NUMBER	RECEIPTS	NUMBER
Powell	\$24,329.04	24	\$22,589.70	24	\$ 18,968.97	19
Wolfe	229,355.13	16	27,013.52	15	28,051.84	14
Magoffin	2,648.19	5	1,487.53	5	1,634.83	4
Breathitt	28,946.50	15	27,153.97	13	19,274.37	8
Perry	113,540.89	24	11,694.89	21	84,853.07	17
Knott	1,414.97	2	277.88	1	255.21	1
Letcher	25,231.35	8	19,443.10	8	9,426.63	6
Morgan	77,892.08	37	56,188.60	31	56,675.00	28
Menifee	5,771.17	11	3,837.89	8	3,590.75	7
Total	302,709.32	142	269,687.08	126	222,730.67	104
Average Receipts	213,175.58		214,037.37		214,164.11	

COUNTY	1967		1966		1965	
	RECEIPTS	NUMBER	RECEIPTS	NUMBER	RECEIPTS	NUMBER
Powell	\$ 17,416.54	20	\$15,140.99	17	\$ 12,360.23	15
Wolfe	16,072.67	12	3,806.11	10	3,074.87	10
Magoffin	1,165.31	4	1,506.98	4	1,265.66	4
Breathitt	17,218.19	8	13,161.74	7	10,440.80	7
Perry	78,564.07	14	76,073.80	13	66,394.87	13
Knott	232.99	1	165.67	1	127.03	1
Letcher	8,414.68	5	7,177.11	4	6,230.33	4
Morgan	39,115.07	24	30,480.75	23	29,021.62	21
Menifee	3,268.35	7	3,231.06	6	2,551.42	6
Total	181,467.87	95	150,744.21	85	131,466.83	81
Average Receipts	191,018.80		177,346.13		162,304.73	

	1964		1963		1962	
	RECEIPTS	NUMBER	RECEIPTS	NUMBER	RECEIPTS	NUMBER
Powell	\$ 7,373.00	14	\$ 5,344.36	13	\$ 6,787.52	11
Wolfe	4,136.07	10	6,843.76	9	683.36	5
Magoffin	981.98	4	1,348.81	4	1,154.87	4
Breathitt	9,332.88	5	9,179.97	4	6,699.94	4
Perry	59,362.28	13	60,982.76	12	36,660.99	11
Knott	122.91	1	112.07	1	111.71	1
Letcher	5,657.49	3	5,127.37	3	7,283.62	3
Morgan	26,242.63	20	24,198.47	19	21,945.94	17
Menifee	2,529.17	5	2,058.47	5	1,803.07	3
Total	115,738.41	75	115,195.95	70	83,131.02	59
Average Receipts	154,317.88		164,565.64		140,900.03	

	1961	
	RECEIPTS	NUMBER
Powell	\$ 5,740.97	8
Wolfe	762.95	6
Magoffin	992.45	4
Breathitt	4,597.22	3
Perry	47,391.75	9
Knott	114.51	1
Letcher	3,479.20	2
Morgan	17,210.23	16
Menifee	865.39	3
Total	81,154.67	52
Average Receipts	156,066.67	

TABLE E2. GROSS RECEIPTS FOR SELECTED BUSINESS TYPES ALONG SPECIFIC RURAL HIGHWAYS*

COUNTY	GASOLINE SERVICE STATIONS	GROCERY STORES	AUTO SALES	RESTAURANTS
1973				
Powell	\$ 636,855 (7)	\$ 2,457,353 (11)		\$ 278,853 (4)
Wolfe	478,845 (3)	210,169 (6)		211,925 (4)
Magoffin		286,224 (4)		
Perry	346,114 (7)	163,547 (3)	\$ 11,171 (1)	388,345 (5)
Breathitt	932,499 (5)	502,216 (5)	912,240 (3)	260,052 (4)
Knott		124,604 (1)		49,364 (1)
Letcher	240,323 (1)	902,099 (3)	1,562,549 (1)	45,956 (3)
Morgan	100,276 (1)	1,000,592 (10)	5,717,338 (3)	179,292 (3)
Menifee		782,944 (7)		83,826 (3)
Total	2,734,912 (24)	6,429,798 (50)	8,203,298 (8)	1,497,613 (27)
Average	113,954.67	128,595.96	1,025,412.25	55,467.15
1972				
Powell	458,118 (4)	1,334,972 (10)		134,350 (3)
Wolfe	198,067 (4)	126,612 (7)		189,174 (5)
Magoffin		302,185 (4)		
Perry	1,507,542 (7)	185,238 (5)	2,615,970 (2)	77,753 (2)
Breathitt	741,585 (5)	137,389 (3)	1,688,813 (4)	117,213 (2)
Knott		112,601 (1)		46,674 (1)
Letcher	56,328 (1)	722,963 (3)	1,008,234 (1)	46,295 (2)
Morgan	226,649 (3)	1,015,694 (11)		22,080 (1)
Menifee	62,575 (1)	973,963 (11)	4,901 (1)	77,886 (3)
Total	3,250,864 (25)	4,911,617 (55)	5,317,918 (8)	711,425 (19)
Average	130,034.56	89,302.13	664,739.75	37,443.42
1971				
Powell	323,242 (3)	1,139,493 (9)	243,186 (1)	55,541 (1)
Wolfe	818,852 (5)	96,973 (6)		184,186 (4)
Magoffin		283,404 (4)		
Perry	480,955 (6)	233,817 (6)	1,491,152 (2)	78,034 (2)
Breathitt	605,355 (3)	1,132,865 (4)	778,313 (2)	167,224 (3)
Knott		114,391 (1)		36,880 (1)
Letcher		928,809 (2)	1,084,359 (1)	40,770 (2)
Morgan	126,623 (2)	1,455,449 (12)	4,450,930 (4)	113,621 (3)
Menifee	88,627 (1)	551,009 (9)		50,972 (2)
Total	2,443,654 (20)	5,936,210 (53)	8,047,940 (10)	727,228 (18)
Average	122,182.70	112,003.96	804,794.00	40,401.56
1970				
Powell	227,745 (3)	1,090,793 (9)		125,141 (3)
Wolfe	358,828 (3)	98,189 (5)	139,976 (1)	136,804 (4)
Magoffin		258,847 (4)		
Perry	322,287 (5)	311,144 (6)	419,113 (1)	47,016 (1)
Breathitt	499,986 (3)	1,062,701 (4)	970,045 (2)	72,102 (3)
Knott		114,491 (1)		
Letcher		887,876 (2)	1,037,846 (1)	
Morgan	83,413 (1)	1,481,847 (10)	3,507,361 (4)	194,502 (4)
Menifee	59,468 (1)	462,685 (6)		54,444 (3)
Total	1,551,727 (16)	5,768,573 (47)	7,334,126 (9)	657,015 (19)
Average	96,982.94	122,735.59	814,902.89	34,579.74

COUNTY	GASOLINE SERVICE STATIONS	GROCERY STORES	AUTO SALES	RESTAURANTS
1969				
Powell	150,809 (3)	1,055,500 (9)		108,399 (2)
Wolfe	230,442 (2)	121,005 (6)	1,939,944 (1)	88,475 (3)
Magoffin		132,268 (4)		
Perry	247,157 (4)	236,932 (5)	408,726 (2)	14,251 (1)
Breathitt	273,593 (3)	801,569 (2)	1,214,993 (1)	168,487 (4)
Knott				27,788 (1)
Letcher		745,151 (2)	729,554 (1)	
Morgan	38,422 (1)	1,376,936 (9)	2,011,906 (4)	112,967 (3)
Menifee		321,535 (5)		61,343 (2)
Total	940,423 (13)	4,790,896 (42)	6,305,123 (9)	581,710 (16)
Average	72,340.23	114,068.95	700,569.22	36,356.88
1968				
Powell	113,963 (1)	770,623 (8)	101,548 (1)	
Wolfe	201,079 (2)	103,936 (6)	1,948,562 (1)	79,836 (2)
Magoffin		156,561 (3)		
Perry	186,184 (2)	256,375 (6)	77,872 (1)	
Breathitt	189,783 (2)	661,427 (2)	684,249 (1)	59,898 (1)
Knott				25,521 (1)
Letcher		792,169 (2)		6,495 (1)
Morgan		987,136 (9)	2,972,201 (4)	175,281 (4)
Menifee		303,318 (4)		55,615 (2)
Total	691,009 (7)	4,031,545 (40)	5,784,432 (8)	402,646 (11)
Average	98,715.57	100,788.63	723,054.00	36,604.18
1967				
Powell	7,705 (1)	694,961 (8)	187,831 (2)	
Wolfe	147,072 (1)	63,928 (6)	1,136,307 (1)	72,555 (2)
Magoffin		102,925 (3)		
Perry	179,494 (2)	201,475 (5)		
Breathitt	189,783 (2)	661,427 (2)	684,249 (1)	59,898 (1)
Knott				23,299 (1)
Letcher		45,437 (2)		
Morgan		540,786 (8)	2,251,069 (4)	170,504 (4)
Menifee		283,584 (4)		42,715 (2)
Total	594,054 (6)	3,003,623 (38)	4,259,456 (8)	368,971 (10)
Average	99,009.00	79,042.71	532,432.00	36,897.10
1966				
Powell		585,416 (6)	313,994 (2)	
Wolfe	114,317 (1)	71,351 (5)		72,848 (2)
Magoffin		939,504 (3)		
Perry	159,152 (2)	222,018 (5)		
Breathitt	41,212 (1)	216,422 (2)	682,140 (1)	40,003 (1)
Knott				16,567 (1)
Letcher		376,393 (1)		
Morgan		530,829 (8)	1,733,425 (3)	124,966 (4)
Menifee		297,907 (4)		24,414 (1)
Total	314,681 (4)	3,239,840 (34)	2,729,559 (6)	278,798 (8)
Average	78,670.25	95,289.41	454,926.50	34,849.75

COUNTY	GASOLINE SERVICE STATIONS	GROCERY STORES	AUTO SALES	RESTAURANTS
1965				
Powell		502,364 (6)	253,936 (2)	
Wolfe	99,944 (1)	54,464 (4)		31,915 (2)
Magoffin		113,675 (3)		
Perry	142,883 (2)	217,355 (5)		
Breathitt	51,749 (1)	214,821 (2)	515,834 (1)	8,006 (1)
Knott				12,703 (1)
Letcher		287,845 (1)		
Morgan		517,785 (8)	1,777,875 (3)	113,993 (3)
Menifee		244,289 (4)		9,636 (1)
Total	294,576 (4)	2,179,598 (33)	2,547,645 (6)	176,253 (8)
Average	73,644.00	66,048.42	424,607.50	22,031.63
1964				
Powell		111,948 (4)	367,136 (2)	
Wolfe	86,976 (1)	56,115 (4)	1,167,983 (1)	17,232 (1)
Magoffin		71,216 (2)		
Perry	108,842 (2)	185,042 (5)		
Breathitt	43,520 (1)	230,061 (2)	569,805 (1)	
Knott				12,291 (1)
Letcher		282,426 (1)		
Morgan		488,586 (8)	1,600,199 (3)	72,616 (2)
Menifee		250,498 (4)		
Total	239,338 (4)	1,675,892 (30)	3,705,123 (7)	102,139 (4)
Average	59,834.50	55,863.07	529,303.29	25,534.75
1963				
Powell		227,050 (3)	228,363 (2)	
Wolfe	48,097 (1)	63,174 (4)	481,093 (1)	
Magoffin		101,305 (2)		
Perry	98,591 (2)	151,285 (4)		
Breathitt	32,765 (1)	237,254 (2)	647,978 (1)	
Knott				11,207 (1)
Letcher		298,739 (1)		
Morgan		401,487 (8)	154,749 (3)	71,931 (1)
Menifee		203,666 (4)		
Total	179,453 (4)	1,683,960 (28)	2,904,927 (7)	83,138 (2)
Average	44,863.25	60,141.43	414,989.57	41,569.00

COUNTY	GASOLINE SERVICE STATIONS	GROCERY STORES	AUTO SALES	RESTAURANTS
1962				
Powell		176,451 (3)	171,189 (2)	
Wolfe		47,828 (2)		15,074 (1)
Magoffin		88,919 (2)		
Perry	87,888 (2)	59,645 (3)		
Breathitt	12,768 (1)	235,741 (2)	421,485 (1)	
Knott				11,171 (1)
Letcher		279,781 (1)		
Morgan		353,667 (7)	1,394,209 (3)	69,666 (1)
Menifee		42,101 (2)		
Total	100,656 (3)	1,284,133 (22)	1,986,883 (6)	95,911 (3)
Average	33,552.00	58,369.68	331,147.17	31,970.33
1961				
Powell		139,976 (2)	102,383 (1)	
Wolfe		53,738 (3)		16,250 (1)
Magoffin		69,094 (2)		
Perry	89,399 (2)	15,612 (2)		
Breathitt		203,378 (2)	256,344 (1)	
Knott				11,451 (1)
Letcher		254,643 (1)		
Morgan		241,147 (6)	1,068,853 (3)	56,270 (1)
Menifee		153,914 (3)		
Total	89,399 (2)	1,131,502 (21)	1,427,580 (5)	83,971 (3)
Average	44,699.50	53,881.05	285,516	27,990.33

*Number of establishments in parenthesis

TABLE E3. PERCENTAGE OF TOTAL BUSINESSES SURVEYED WHICH WERE GASOLINE SERVICE STATIONS, GROCERY STORES, AUTO SALES, OR RESTAURANTS

	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961
Percentage of Total Businesses Surveyed	65	58	62	64	63	63	63	66	63	60	59	58	60
Percentage of Total Gross Receipts of Businesses Surveyed	54	35	45	29	47	49	45	44	40	49	42	42	34

APPENDIX F

ANNUAL COAL PRODUCTION

**TABLE F1. TOTAL ANNUAL TONS OF COAL PRODUCED BY COUNTY
(SELECTED YEARS 1951-1973^a)**

YEAR	BREATHITT	KNOTT	LETCHER	MAGOFFIN	MENIFEE	MORGAN	PERRY	WOLFE	TOTALS
1951	1,155,227	539,554	4,701,155	135,613	11,150	215,240	5,841,300	42,120	12,641,359
1952	760,774	822,927	4,588,723	244,399	381	177,495	5,029,685	12,430	11,636,814
1955	519,903	975,094	5,314,749	103,531	962	136,609	4,754,884	12,783	11,818,515
1956	751,221	1,155,803	6,033,086	3,915	992	146,237	5,643,687	11,957	13,746,898
1957	820,173	1,455,575	5,931,257	14,622	471	134,593	5,305,043	13,554	13,675,288
1958	752,716	1,642,218	5,514,461	80,960	1,300	45,826	4,640,234	9,878	12,687,593
1960	553,366	1,357,796	4,286,883	77,619	0	41,165	4,445,838	17,331	10,779,998
1961	557,170	2,083,300	4,486,162	69,022	0	49,773	3,440,249	18,483	10,704,159
1962	654,726	2,055,951	4,899,325	46,078	0	42,054	3,538,400	11,723	11,248,257
1963	253,005	2,469,163	5,367,006	114,225	0	37,277	3,661,451	10,857	11,912,984
1964	257,383	1,889,548	6,082,111	101,773	0	37,286	3,850,837	8,795	12,227,733
1965	444,099	2,149,315	6,449,842	98,833	0	61,326	4,103,745	5,390	13,312,550
1966	839,566	3,091,368	6,602,283	206,737	0	34,257	4,728,240	0	15,502,451
1967	2,267,818	2,245,346	6,572,608	160,197	0	27,073	4,805,392	700	16,079,134
1968	1,637,135	2,018,603	6,033,202	309,490	0	18,468	4,389,150	100	14,406,148
1969	2,585,608	2,735,478	6,167,143	564,890	0	27,733	6,062,096	0	18,142,948
1970	3,274,242	3,814,595	7,390,633	714,277	0	22,005	7,938,252	10,292	23,164,296
1971	3,872,962	3,836,588	6,116,541	860,852	0	449,399	7,155,559	16,063	22,307,964
1972	6,012,049	3,385,223	5,245,800	410,605	0	153,350	4,954,047	0	20,161,074
1973	6,361,131	4,075,453	4,686,538	788,738	0	129,636	5,634,221	0	21,675,717

^aSource: Kentucky Department of Mines and Minerals,
Annual Reports, selected years 1951-1973

APPENDIX G

LAND VALUE SURVEY

TABLE G1. ASSESSED VALUES FOR LAND ADJACENT TO MAJOR HIGHWAYS

Powell County (adjacent to Mountain Parkway)				
LAND OWNER	1973 VALUATION	1973 ACREAGE	1961 VALUATION	1961 ACREAGE
A	\$ 3,509	25	NA	NA
B	21,125	58	\$ 11,800	55
C	32,500	180	32,850	150
D	48,100	150	NA	NA
E	29,250	86	21,700	125
F	15,760	100	NA	NA
G	35,368	220	5,040	205
H	22,950	61	NA	NA
I	949	10	NA	NA
J	11,375	50	NA	NA

Powell County (land chosen randomly throughout county)				
	1973 VALUATION	1973 ACREAGE	1961 VALUATION	1961 ACREAGE
1	33,800	401	3,900	207
2	8,450	105	1,605	105
3	28,925	212	3,470	217
4	7,600	62	965	62

Wolfe County (adjacent to KY 15 near Campton)				
	1974 VALUATION	1974 ACREAGE	1965 VALUATION*	1965 ACREAGE
A	7,000	61	4,275	73
B	11,000	23	1,000	11
C, D, E (formerly A)	90,000	3 lots**	17,000	lot
F	11,500	lot	1,300	lot

*30 percent valuation
 **A lot is a parcel of land less than one acre which was not quantitatively given in county records.

Breathitt County (adjacent to KY 15)				
	1973 VALUATION*	1973 ACREAGE	1959 VALUATION**	1959 ACREAGE
A	30,000	110	NA	175
B	22,000	70	NA	125
C	6,000	10	NA	50
D	24,000	20	14,300	9
E	80,000	14	6,500	44
F	43,200	226	81,250	566
G	9,500	15	500	70
H	3,800	38	1,100	75
I	54,000	78	NA	NA
J	5,200	52	NA	NA
K	10,000	1	NA	NA

*90 percent valuation
 **35 percent valuation

Breathitt County (land chosen randomly throughout county)

	1973 VALUATION	1973 ACREAGE	1967 VALUATION*	1967 ACREAGE
1	10,000	70	3,000	70
2	10,000	8	1,500	8
3	10,000	15	2,000	15
4	2,000	1	6,000	1
5	7,000	220	1,500	220

*50 percent valuation

Perry County (adjacent to KY 15)

	1973 VALUATION	1973 ACREAGE	1966 VALUATION	1966 ACREAGE
A	30,000	10	40,000	10
B	12,000	28	34,000	28
C	1,200	20	600	1
D	1,800	4	8,000	2
E	4,000	lot	8,000	lot
F	25,800	30	49,500	40
G	2,400	20	1,800	20
H	4,000	1	5,000	1
I	10,800	1	9,000	1
J	13,400	58	8,000	88
K	5,500	12	7,500	12
L	4,200	7	1,000	1
M	7,200	4	6,000	4
N	6,000	3	11,000	3
O	6,500	15	8,500	15

Perry County (land chosen randomly throughout county)

1	1,000	26	800	26
2	1,200	1	4,500	1
3	14,500	1	10,000	1
4	32,500	250	25,000	350
5	33,000	20	32,500	20

Magoffin County (adjacent to KY 7)

	1974 VALUATION	1974 ACREAGE	1963 VALUATION*	1963 ACREAGE
A	400	5	1,100	13
B	17,800	2	600	2
C	15,000	2	1,015	4
D	6,500	36	500	28
E	14,000	47	160	46

*30 percent valuation

Magoffin County (adjacent to Parkway Extension)

	1973 VALUATION	1973 ACREAGE	1966 VALUATION	1966 ACREAGE
A	12,250	234	980	211
B	4,100	38	NA	81
C	8,100	162	1,680	175
D	500	31	NA	1
E	2,100	295	NA	NA
F	700	24	NA	NA
G	3,000	52	NA	NA
H	14,000	91	NA	NA
I	19,000	51	NA	NA
J	3,700	10	NA	NA

Letcher County (adjacent to KY 15)

	1973 VALUATION	1973 ACREAGE	1966 VALUATION	1966 ACREAGE
A	NA	NA	NA	NA
B	49,500	136	8,000	13
C	2,000	65	NA	NA
D	3,800	4	NA	NA
E	2,000	30	NA	NA
F	2,500	10	NA	NA
G	20,000	1	NA	NA
H	8,100	200	23,000	2
I	17,500	lot	11,000	12
J	NA	NA	29,000	1

Letcher County (land chosen randomly throughout county)

1	21,000	6	9,000	6
2	6,000	2	3,000	2
3	16,000	6	12,000	6
4	5,000	5	2,500	5
5	52,000	0.3	32,000	0.3

Knott County (adjacent to KY 15)

	1973 VALUATION	1973 ACREAGE	1967 VALUATION	1967 ACREAGE
A	11,000	0.12	10,000	11
B	5,500	25	4,800	11
C	1,200	5	NA	NA
D	8,000	5	NA	NA
E	5,000	4	2,000	4
F	6,600	0.22	6,000	0.29
G	5,500	0.30	NA	0.44
H	500	38	5,000	87
I	10,000	3	6,600	11
J	11,000	3 small lots	12,000	0.37

Knott County (land chosen randomly throughout county)

1	2,000	50	1,500	50
2	1,800	5	1,500	5
3	1,200	50	2,500	NA
4	4,025	50	2,500	50
5	11,500	150	10,000	150

Menifee County (adjacent to US 460)

	1973 VALUATION	1973 ACREAGE	1969 VALUATION	1969 ACREAGE
A	1,700	1	8,000	1
B	22,500	8	7,000	8
C	30,000	14	18,000	14
D	10,000	72	10,000	72
E	4,000	19	4,000	19
F	20,000	25	6,000	25
G	1,000	lot	7,500	lot
H	24,500	12	16,000	12
I	12,000	106	12,000	106
J	25,000	16	6,000	16

Menifee County (land chosen randomly throughout the county)

1	14,500	250	3,000	250
2	7,200	63	6,000	63
3	30,000	69	20,000	69
4	30,000	82	23,000	82
5	30,000	104	21,000	104

Morgan County (adjacent to US 460)

	1973 VALUATION	1973 ACREAGE	1966 VALUATION	1966 ACREAGE
A	18,000	48	15,000	75
B	17,000	16	16,000	16
C	23,000	70	18,000	70
D	70,000	350	35,000	350
E	78,000	245	55,000	245
F	130,200	930	90,000	885
G	28,000	100	18,000	100
H	42,000	125	30,000	125
I	10,000	55	7,000	55
J	107,000	335	75,000	335

Morgan County (land chosen randomly throughout county)

1	155,300	500	115,000	500
2	39,000	220	30,000	220
3	23,400	105	18,000	105
4	18,700	50	12,000	50
5	40,000	290	20,000	290

TABLE G2. ASSESSED VALUES FOR LAND ON SELECTED INTERCHANGES OF THE MOUNTAIN PARKWAY

Powell County (at Stanton-Jeffersonville Interchange)				
LAND OWNER	1974 VALUATION	1974 ACREAGE	1961 VALUATION*	1961 ACREAGE
A	21,450	3	800	0.3
B	2,925	lot	550	lot
C	6,090	lot	1,000	lot
Powell County (at Waltersville Interchange)				
	1974 VALUATION	1974 ACREAGE	1961 VALUATION*	1961 ACREAGE
D	46,450	30	1,000	30
E	35,000	37	2,300	37
F	6,000	lot	375	lot
G	1,500	16	1,000	16

*30 percent valuation