Institute for Public Policy and Business Research
University of Kansas

THE NATURE AND SIGNIFICANCE OF THE OVERLAND PARK/JOHNSON COUNTY ECONOMY

Report to the Overland Park Chamber of Commerce

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PREFACE

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In addition, we would like to acknowledge the assistance of the Johnson County Economic Research Insitute and thank those companies which participated in the survey for this study.

I. EXECUTIVE SUMMARY

The Overland Park Chamber of Commerce commissioned the Institute for Public Policy and Business Research to do this study because the Chamber is interested in developing some quantitative estimates of the economic significance of service and administrative firms in the Overland Park area. Service industries and administrative firms make up a very significant portion of the Overland Park and Johnson County economies, but the community is unable to provide hard facts about the specific impacts of these industries on the city, county and state. The Chamber believes, as this study confirms, that the impact of these firms on the local and state economies is very significant. Thus, the purpose of this study is to obtain economic impact data that can guide decision makers on issues affecting the community.

This study analyzes the economic impact and significance of export-oriented regional service firms and national and regional headquarters located in Johnson County. It includes analyses of published data on the Johnson County economy, data from a survey of service and headquarters firms located in Overland Park, tax simulations performed for three hypothetical firms, and the estimated tax revenue and total economic impacts of such firms located in Johnson County. The major findings of this study are as follows.

Key Characteristics of the Overland Park and Johnson County Economy

As a first step in this study, published data was analyzed to determine the key characteristics of the local economy. In this analysis it was found

that Overland Park and Johnson County have had very high rates of employment and establishment growth compared with the state and nation in recent years. This is particularly true for the services sector, and specifically the business services subsector. Between 1977 and 1982, which are the latest data years for cities, employment in the services sector grew 196% in Overland Park and 136% in Johnson County, compared with 93% in Kansas and 75% in the United States. Employment in business services, which includes such industries as advertising, computer and data processing services, and management consulting and public relations, grew 443% in Overland Park and 137% in Johnson County, compared with 42% in Kansas and 27% in the United States over the same period. Between 1980 and 1985 (1985 is the latest year for which comparable data by industry is available at the county, state and national levels), employment in the services sector grew 64% in Johnson County, compared with 17% in Kansas and 25% in the United States. Business services grew 114% in Johnson County, 57% in Kansas and 43% in the United States during the 1980-85 period. Thus, local growth in services greatly exceeded that in the state or nation during this period.

Further analysis of the data was carried out to determine whether this growth was due to national or state trends, industry trends or local trends. Based on a comparison of employment growth rates in Johnson County and the United States, the majority of the rapid employment growth in the county was found to be related to the dynamic county economy itself. Through this analysis it was determined that the rapid Johnson County employment growth significantly exceeded the national or state growth and, therefore, Johnson County's growth could not simply be attributed to overall national or state employment growth rates. Nor could Johnson County's employment growth be

attributed solely to its economic composition. Johnson County's economy is made up of many high-growth industries, but when one sums up the increase in employment growth which should have occurred, based solely on the types of industries located in the county, Johnson County's employment growth still exceeded what would have been expected. Thus, Johnson County's economy is not just keeping up with the nation's or state's growth rates or performing only at the rate to be expected based on the types of high-growth industries it has. Its employment growth, during the 1980-85 and 1975-80 periods, exceeded what would have been expected based on these influences alone.

Analysis was also carried out to determine the economic make up of the local economy. Location quotients analysis was used to consider which sectors of the local economy make up its economic base. The economic base is the "backbone" of an economy - it is those sectors which are considered primary industries because they bring new wealth in from outside the area and create additional jobs directly in their own industry and indirectly in secondary industries in the community. It is generally assumed that subsectors which make up a larger proportion of the local economy than of the national economy are subsectors which produce more goods or services than are needed for the local market; therefore, they are considered export-oriented subsectors of the local economy. Thus, according to this method of analysis, these subsectors are the economic base industries.

Those economic subsectors which make up a greater proportion of the Johnson County economy than of the national economy include durable goods in the wholesale trade sector; general merchandise, apparel and accessories, furniture and home furnishings and miscellaneous retail stores in the retail trade sector; and credit agencies, insurance carriers, insurance agents and

brokers, real estate offices, and holding and other investment offices in the finance, insurance and real estate sector. They also include business services, miscellaneous services, transportation services, communications, printing and publishing, chemicals and allied products, electric and electronic equipment, and the administrative and auxiliary sectors (headquarters and division offices) in wholesale trade, services and transportation and other public utilities. Other manufacturing sectors are, by their nature, also generally considered a part of the economic base.

According to this method of analysis, the subsectors identified above are the export-oriented or economic base subsectors of Johnson County. It is interesting to note that this list includes many retail trade subsectors. In most communities, retail trade subsectors are secondary industries which support primary industries in other sectors; however Johnson County is unusual in Kansas and the United States in that elements of retail trade are among the export-oriented subsectors of its economy. Its location on the state border and its ability to draw retail customers in from outside the community make some portions of its retail trade sector part of the economic base.

Published data was also used to try to answer another question regarding the significance of service sectors: what is the worth of service jobs as compared with manufacturing jobs or jobs in other industries traditionally considered to be primary industries. The fear exists that service jobs are low-wage jobs and that an economy which is predominated by service industries is a low-income economy dependent on exports from outside. An evaluation of payroll data by industry appears to partially refute this notion. In Johnson County, payroll per employee in many

business services has exceeded payroll per employee in manufacturing. Payroll per employee in manufacturing was $21,091 in 1985, while it was $27,106 in advertising, $27,021 in computer and data processing, $25,515 in management consulting and public relations, and $32,278 in accounting, auditing and bookeeping services, all of which are in the services sector. Thus, the fear that a service economy means an economy dependent on low-wage jobs is not well-founded if such business services and other high paying services are an important part of that economy.

Employment and Spending Patterns of Export-Oriented Service Firms Located in Johnson County

Many questions regarding the significance of service industries in Overland Park and Johnson County could not be answered by published data. A survey of local export-oriented service and headquarters firms was used to get more in-depth information regarding their significance. Twenty firms responded to the survey questionnaire, representing a 28 percent return rate. The survey covered information on 4,373 employees and included firms in retailing, wholesaling, advertising, finance, insurance, telecommunications, transportation, accounting, engineering and manufacturing. Results were analyzed for the total sample of firms, as well as broken down into two categories: smaller, regional service firms with an average of 66 employees and larger, headquarters or division offices with an average of 418 employees.

Results of this survey of export-oriented service and headquarters firms located in Johnson County, as undertaken in this study, reveal that, on average, for each 100 employees, larger headquarters or division

establishments have higher overall expenditures, payroll and capital, and utilize more office space than do smaller regional service firms. For every 100 workers, larger headquarters or divisions annually spend over $1,300,000 on the purchase of goods and services in Johnson County and over $1,500,000 in Kansas, including Johnson County, and smaller regional service firms spend over $500,000 in Johnson County and over $600,000 in Kansas, including Johnson County.

For each 100 workers employed, the smaller firms surveyed also annually pay an average of approximately $1.6 million in payroll to employees who reside in Johnson County and an additional $100,000 to employees who reside elsewhere in Kansas; the larger firms pay an average of approximately $2.6 million in payroll to employees residing in Johnson County and approximately $400,000 more in payroll to other workers residing in Kansas outside of Johnson County.

These results indicate that smaller, regional service firms and larger headquarters and division establishments behave somewhat differently and have different impacts on the county and state economies. The larger firms have a greater economic impact per 100 workers than the smaller firms, but both are very significant to the local and state economies. Smaller, regional service firms are more prevalent in the local economy, as well as in the state and national economies, than the larger, headquarters firms and thus are very significant because of their number as well as because of their individual economic contributions.

When the spending patterns for both the large headquarters and smaller regional service firms are combined based on their proportions in the local economy, the total annual expenditures by such a firm per 100 workers are

over $600,000 to other Johnson County firms and over $700,000 to other Kansas firms. These are averages based on survey data. Annual payroll per 100 employees for the total set of firms is approximately $1.8 million to employees who reside in Johnson County and an additional $100,000 to employees who live elsewhere in the state.

According to the Kansas Department of Human Resources, total employment in Johnson County was 190,299 in April 1988. Of these, based on proportions in past years found in Bureau of the Census data, approximately 75 percent, or 142,725, are service workers in transportation, communications, utilities, wholesale trade, retail trade, finance, insurance, real estate, and other services. Of the 142,725 service workers, we estimate that approximately 92,000, or almost two-thirds of service workers, are employed by headquarters establishments or services which export outside the local or state market. These 92,000 workers represent 48 percent of all employment in the county as of April 1988. With the addition of 33,200 additional jobs in the county which are indirectly related to the initial 92,000 jobs, 125,200 jobs in Johnson County are indirectly or directly caused by the location of the export-oriented service or headquarters firm in Johnson County. This represents 66 percent of county employment. These figures include both retail trade workers and other service workers employed in export-oriented service firms and include both local exports across the state line and distant exports to other cities. Service sales across the state line are major exports for Johnson County; this local export activity makes the economy of this area somewhat unusual in the state.

Of the 92,000 jobs in export-oriented service or headquarters firms in Johnson County, approximately 65,000, or 34 percent of total county

employment, can be directly attributed to the export of services outside the local market and approximately 35,000 of these, or 18 percent of total county employment, are directly related to the export of services outside the state market. With the addition of county jobs which are indirectly related to the export of county services outside the local or state markets, 46 percent of total county employment, or 88,400 jobs in the county, are related to the export of Johnson County services outside the local market and 25 percent of total county employment, or 47,600 jobs in the county, are related to the export of Johnson County services outside the state market.

Based on averages from those firms surveyed for this study, of those workers employed directly by Johnson County export-oriented service firms, 28 percent live in Overland Park, 75 percent in Johnson County and 85 percent in the state of Kansas. About 15 percent live on the Missouri side of the line.

Estimates of Total Economic Impact

The input/output model of the Institute for Public Policy and Business Research was used to estimate the total economic impact of the export-oriented service and headquarters sector located in Johnson County. Based on survey data and this model, total sales in the county due to 100 export-oriented service workers are estimated to be $3 million. The total earnings in the county are $2.1 million and the total number employed is 136. Total sales in the state due to 100 export-oriented service workers are estimated at $3.9 million. The total earnings in the state are estimated to be $2.3 million and the total number of jobs is 145.

About 33,200 additional jobs in the county and 41,500 jobs in the state, including those in Johnson County, depend on the initial 92,000 export-oriented service jobs in Johnson County. Thus, total employment in the state, created by the existence of the export-oriented headquarters and regional services located in Johnson County, is conservatively estimated at 133,500 jobs or approximately 11 percent of total Kansas employment in 1988.

Based on the estimate of 133,500 jobs in the state which can be attributed to export-oriented services located in Johnson County, total sales in the state are approximately $3.5 billion and in the county they are over $2.8 billion. Total earnings for the 133,500 workers, are estimated at $2.2 billion in the state and are $2 billion in the county.

The estimated total sales impact due to only the 65,000 jobs which are estimated to be directly related to Johnson County service exports outside the local market would be $2.5 billion for the entire state and $2.0 billion for the county. The total earnings impact would be $1.5 billion in the state with $1.4 billion of that in the county. Total employment due to the 65,000 jobs would be 94,300, with 23,400 additional jobs in the county and 5,900 additional jobs elsewhere in the state.

The estimated total sales impact due to the 35,000 jobs which are estimated to be directly related to Johnson County service exports outside the state market would be $1.3 billion for the entire state and $1.1 billion for the county. The total earnings impact would be $800 million in the state with $740 million of that in the county. Total employment due to the 35,000 jobs would be 50,800, with 12,600 additional jobs in the county and 3,200 additional jobs elsewhere in the state.

Effects of Tax Laws on Export-Oriented Service Firms and Estimate of Tax Revenue from These Firms

Other questions considered in this study were the estimated tax revenue derived from Johnson County export-oriented service and headquarters establishments, and the impact of tax laws on such firms. Our general estimate of the total personal and corporate income tax and sales tax revenues attributed to export-oriented service and headquarters firms is $182 million dollars for the state, which is over 11 percent of the total expected revenue in Kansas from these taxes for the July 1, 1987 through June 30, 1988 period. This is based on the estimated 95,000 export-oriented service workers in Johnson County and 41,500 other jobs in the county or state indirectly attributable to the existence of the Johnson County export-oriented service sector. It includes estimates of over $106 million in income taxes and $76 million in sales tax collected.

In order to consider the impact of area and state taxes on the firms studied, tax simulations were conducted. Three industries were chosen to represent service and headquarters firms and hypothetical firm profiles were developed for a firm in each of these three industries. Tax laws were then applied to each of these hypothetical firms based on its location in either Johnson County, Kansas or Jackson County, Missouri. Taxes were estimated in Kansas for both before and after reassessment. Missouri taxes were calculated based on the current tax situation in Missouri. The Missouri taxes did include the Kansas City, Missouri earnings tax and the property tax effect of the decision in the school district desegregation case. A capitalization adjustment was made due to higher property taxes in Kansas.

Since economists believe that property values will adjust to differences in property taxes, we reflect this with this adjustment.

Of the three hypothetical firms analyzed, only the results for the data processing firm were significant for the effect on the total firm. For this firm, Kansas taxes were 110.8% higher before reassessment and 89.0% higher after reassessment than the Missouri taxes. However, the difference is reduced, though still significant when total taxes to the state and federal government are considered. Total taxes in Kansas before reassessment were 13.1% higher than those in Missouri and taxes in Kansas after reassessment were 11.1% higher than those in Missouri. Net profit, after capitalization of property taxes, was 6.0% lower in Kansas before reassessment and 6.8% lower in Kansas after reassessment than in Missouri.

For the telecommunications regional headquarters, the tax difference was again significant for the Kansas and Missouri taxes. If the firm were located in Kansas it would pay 85.1% more in Kansas before reassessment and 39.4% in Kansas after reassessment than in Missouri if it were located in Missouri. Once again the difference is greatly reduced when taxes to other states and the federal government are taken into account. All taxes to all levels of government were 1.6% higher before reassessment and 0.9% higher after reassessment for the Kansas location than for the Missouri location. Net profit, after a capitalization adjustment for property tax, was 0.4% lower in Kansas before reassessment and 0.9% lower in Kansas after reassessment than in Missouri.

For the nonelectrical machinery manufacturing headquarters, taxes paid to Kansas before reassessment were 45.6% higher and after reassessment were 24.9% higher than taxes paid to Missouri. The difference in all taxes,

including taxes paid to Kansas or Missouri, other states and the federal government, was negligible - total taxes for the firm located in Kansas were 0.7% higher before reassessment and 0.4% higher after reassessment than for the firm located in Missouri. Net profit, after a capitalization adjustment for property tax, was 0.5% lower in Kansas before reassessment and 0.8% lower in Kansas after reassessment than in Missouri.

Of the taxes, state income tax, property tax, unemployment insurance and workman's compensation were all higher in Kansas than in Missouri for each of the three firms both before and after reassessment. The estimated effects of reassessment raised property tax on commercial real estate about 250 percent and lowered the effective property tax on business personal property by about 73 percent. The net effect on the three hypothetical firms was lower total Kansas property taxes after reassessment because of the relative amounts of the two types of property which each hypothetical firm owned. Although the total Kansas property tax bills were more in line with Missouri property taxes after Kansas reassessment, they were still somewhat higher than in Missouri. The sales tax on equipment purchases for all three firms were significantly higher in Missouri than in Kansas, as were tax payments to other states and the federal government for the two national firms - nonelectrical machinery and telecommunications.

Thus, the tax simulations show that there is a significant difference in the total taxes paid to either Kansas or Missouri, depending on which location each of the three firms might choose, but the significance is greatly reduced when total taxes to all states and the federal government are compared. The net difference to the entire firm of locating in either Johnson County, Kansas or Jackson County, Missouri is relatively negligible

for the two firms which have locations in other states - the nonelectrical machinery and telecommunications firms. The difference is still somewhat significant for the data processing firm, which only has one location in either Johnson County or Jackson County.

Summary

One can conclude, based on the results of this study that the regional service and headquarters firms located in Johnson County have a very significant economic impact on the county and state economies. There is a substantial portion of the services sector of the Johnson County economy which can be considered in the same regard as "primary" industries, such as manufacturing. Just as a manufacturing firm can draw wealth into a state by exporting its product, create new employment in the state, and support growth in other sectors of the economy, so too can certain types of service firms. Not all services exist merely to support other local industries or the consumption of the local workforce. Export-oriented services such as business services and headquarters establishments do export their "product" outside the community and state, draw in wealth and create additional jobs. They also provide high-paying jobs for highly skilled and educated workers. A service economy is not necessarily a low-wage economy, dependent on imports.

Essentially, there are two types of services which exist - export-oriented services, which are primary industries and part of a community's economic base, and services, such as personal services, which are not primary, are not part of the base, and are dependent on the existence of the primary industries in the economy. Within Johnson County, approximately

three-fourths of the work force is made up of service employees. Of these, about two-thirds, or 92,000 workers, are in export-oriented service firms, and one third are in supporting service firms. As of April 1988, at least 48 percent of total Johnson County employment is in export-oriented services and 11 percent of the jobs in the state can be attributed, directly or indirectly, to the export-oriented service firms located in Johnson County. The 65,000 Johnson County jobs related to service exports outside the local market represent 34 percent of total Johnson County employment and the 35,000 Johnson County jobs related to service exports outside the state market represent 18 percent of total Johnson County employment. With the addition of indirect workers, Johnson County service exports outside the local market account for about 88,400 jobs or 46 percent of total county employment, and Johnson County service exports outside the state market account for about 47,600 or 25 percent of total county employment.

Therefore, it can be concluded that the export-oriented service sector of Johnson County is of great significance to the county and state economies. The economic well-being of the county, and to a lesser extent, of the state are affected by the economic well-being of this sector. The significance of this sector should be recognized and public policy should take knowledge of this significance into account.

II. INTRODUCTION

The Overland Park Chamber of Commerce commissioned the Institute for Public Policy and Business Research to do this study because the Chamber is interested in developing some quantitative estimates of the economic significance of service and administrative firms in the Overland Park area. Service industries and administrative firms make up a very significant portion of the Overland Park and Johnson County economies, but the community is unable to provide hard facts about the specific impacts of these industries on the city, county and state. The Chamber believes, as this study confirms, that the impact of these firms on the local and state economies is very significant. Thus, the purpose of this study is to obtain economic impact data that can guide decision makers on issues affecting the community.

The economic significance of service firms is often misunderstood and underestimated. Some people believe that services are secondary industries which exist only to support primary industries, such as manufacturing. They believe that the manufacturers and other primary industries which produce goods locally and sell them outside the community, thereby importing additional wealth into the community, are the backbone of an economy.

Theoretically, an economy expands or shrinks, and income levels rise or fall, based on an economy's ability to develop and maintain primary industries. According to the prevalent idea, services are not primary industries, services exist only to support the primary industries, such as manufacturers, and services do not bring additional wealth into an economy-they only recirculate the wealth imported by the primary industries.

Manufacturing jobs are considered valuable, high-wage jobs which communities eagerly seek, while service jobs are considered low-wage, unattractive jobs which lower overall income levels.

The continuing shift in the U.S. economy from manufacturing to services is viewed with fear by those who believe that high-paying manufacturing jobs are being lost and are being replaced by low-wage service jobs which only serve the local population and do not import any wealth. It is feared that an economy heavily committed to services would be dependent on outside areas for goods and would experience a drain of funds and declining income levels because it would not have exports of its own.

Because of this general belief that service jobs and industries are not worth as much to a community as those in manufacturing, public policies have tended to favor the development of manufacturing industries and ignore the development of service industries. Incentives are offered to attract manufacturing companies to a community or state, whereas these incentives are often not made available to service firms.

However, there is a growing recognition that certain service subsectors perform the same role as manufacturers. Like many manufacturing companies, which produce goods locally and export them, many services provide a "product" produced by local employees and exported to those outside the community. Services vary a great deal - from low-wage, localized janitorial services to high-paying legal, consulting, research, engineering, accounting and architectural services with regional, national and international accounts.

A 1978 study of business services in New England supports this idea that some service subsectors are export-oriented. This study surveyed

advertising agencies; research and development laboratories; management, consulting and public relations services; equipment rental and leasing services; engineering, architectural and surveying services; and accounting, auditing and bookkeeping services. Of those companies responding, 21 percent sold over half of their output in the United States outside the New England region. (Ashton & Sternal, 1978) The percentage which sold outside of their state or community was not determined, but could be expected to be even higher.

Services make up a significant and growing portion of the economy at the national, as well as at the state and local levels. In its broadest context, the service sector is defined as all "nongoods producing industries." (Guide to Service Industry Statistics and Related Data, 1984) This definition includes transportation; communications and utilities; finance, insurance and real estate; wholesale and retail trade; government; agricultural services; personal, business, professional, educational, social and other services; and sometimes construction. Using a more restricted definition which excludes government and construction, the percentage of service industry employment of total employment in 1985 was 68.1 percent nationally, 67.3 percent in Kansas, and 75.1 percent in Johnson County. This is an increase from 62.1 percent nationally, 63.9 percent in Kansas, and 72.4 percent in Johnson County in 1975. (County Business Patterns)

In addition to this significant growth in employment, services have also grown significantly with respect to their contribution to the Gross National Product (GNP) of the United States. GNP from total private sector services was 48 percent of GNP in 1950. By 1980, services made up nearly 70 percent of the nation's GNP. (Guide to Service Industry Statistics and

Related Data, 1984) Worldwide, the contribution of the service sector to Gross Domestic Product averaged 58 percent in 1980. (Riddle, 1986).

Thus, it can be seen that services are a large and growing portion of the economy, both locally and nationally. The remainder of this report seeks to demonstrate what the economic impact of services are on the local and state economies and also to evaluate how tax laws impact these industries. The following section describes the overall methodology used in this study.

III. BASIC METHODOLOGY

Many different techniques and methodologies were included in this study, including a review of scholarly literature, shift-share analysis, simple locational quotients, input-output modeling, projections using survey data, direct sampling and hypothetical firm profiles. The study began with a review of available data on employment, establishments and payroll by industry in Overland Park, Johnson County and the State of Kansas. This review sought to discover what information was already available and to determine from it the the nature of the Overland Park/Johnson County economy. This initial review of data included an analysis of historical employment and establishment data to determine the statistical significance of economic sectors and their relative growth, and it focused on headquarters and business services which tend to have regional and national markets. It also included a location quotient analysis to establish which sectors make up the area's economic base and a shift-share analysis to determine the reasons behind the area's employment growth. The results of these analyses will be reported in Section IV of this paper.

The rest of the study went beyond published data so as to develop a clear picture of the economic significance of the administrative and service sectors of the Overland Park/Johnson County economy. Published data on these sectors is very sparse and does not provide enough information to develop a good estimate of the importance of these sectors. These sectors are of much greater significance to the local and state economies than is generally realized. Appropriate data is needed to demonstrate that to

policymakers so that public policies do not damage the interests of sectors which are really a part of the economic base of the community and state.

In order to generate a good estimate of the significance of the administrative and service sectors, two main steps were taken as a part of this study. A questionnaire survey was used to get detailed information on employment and financial data of firms which are in the sectors this study is concerned with and which are located in Overland Park, and an input-output model of the county economy was developed in order to determine the economic impacts these firms have on the county and state. This input-output model provides multipliers which can be used to estimate the total economic effects of the initial expenditures of such companies. The results of the questionnaire itself will be discussed in Section V of this paper, and the results of the input-output model will be presented in Section VI. Section V also includes an estimate of the total number of export-oriented service or headquarters workers in Johnson County based on location quotients, used to estimate exports across the state line, and data from the study on Business Retention and Expansion in Mid-Size Kansas Communities (Krider & Maynard-Moody, 1988), to estimate distant exports to other cities and states. The specific tax revenue implications of the economic impact of such firms will be discussed in Section VII.

In addition to evaluating the economic impact of the administrative and service sectors on the county and state economies, this study also seeks to evaluate the impact of state and local tax laws on these sectors. As a part of this study, hypothetical firm profiles were developed for service and administrative firms and tax simulations were run on these hypothetical firms based on their location in either Johnson County, Kansas or Jackson

County, Missouri. In this way, the differing impact area and state tax laws have on firms in the Kansas City area could be considered. There is some concern that local and state tax laws might hamper the community's ability to attract and retain service and administrative firms which are a part of the area economic base. This study seeks to determine whether that may be the case relative to the situation on the Missouri side of Kansas City by applying tax laws to hypothetical firms. The results of these tax simulations will be presented in Section VIII.

IV. ANALYSIS OF PUBLISHED DATA

A. Types of Data Analyzed

This section of the study analyzes data on all major sectors of the county, state and national economies, in addition to focusing more specifically on data for headquarters and service firms. Data has been collected from records published by the United States Bureau of the Census. Annual data for the years 1970 through 1985 has been collected for the county, state and national economies and includes all major industries. Data specific to the Overland Park economy is more limited: data is not available for all industries and is only published at five year intervals; this data is also less detailed. Data on Overland Park has been collected for the years 1972, 1977 and 1982, the three most recent years for which data is available.

Since the origins of this study, several terms have been used to describe the types of businesses which are the focus of this study. The focus has been described as regional service firms, office jobs, and regional or national headquarters. In order to analyze the relative size and growth of these types of firms in comparison with the rest of the economy, it is necessary to define the focus of the study in the terminology that is used in the available data sources. These data sources are collected and organized based on the 1972 Standard Industrial Classification (SIC) code system of the federal government.

The structure of the SIC code system makes it possible to tabulate and analyze data at several levels of industrial detail. Data is classified at major sector, two-digit, three-digit and four-digit industry code levels.

This report primarily uses the major sector and two-digit level codes because a significant amount of data in published county and city records is suppressed at the three-digit and four-digit levels in order to protect establishments' privacy.

Among the two-digit SIC code categories, those which are most relevant to this study are the categories of business services (SIC 73) and administrative and auxiliary establishments. These categories most closely approximate the types of firms dealt with in this study. The Standard Industrial Classification Manual describes business services as "establishments primarily engaged in rendering services not elsewhere classified, to business establishments on a fee or contract basis." Business services include such businesses as advertising; management and consulting services; commercial research, development and testing; and computer and data processing services. Two related sectors, which are included in the analysis and which fall under the miscellaneous services category, are engineering, architectural & surveying services and accounting, auditing & bookkeeping services. Business services is one of the fastest growing subsectors of the economy, both locally and for the nation. Between 1980 and 1985, employment in business services increased 42.8% in the United States and 113.8% in Johnson County. Between 1977 and 1982, business services grew 136.5% in Johnson County and 442.6% in Overland Park.

The other SIC category this report focuses on is the administrative and auxiliary category. The Standard Industrial Classification Manual defines these types of firms as follows:

> "A central administrative office is an establishment primarily engaged in general administrative, supervisory, accounting,

> purchasing, engineering and systems planning, advertising, legal, financial, or related management functions performed centrally for other establishments of the same company. Central administrative offices characteristically do not produce any products nor do they provide any services for the general public, other companies, or government.
>
> "An auxiliary unit is an establishment primarily engaged in performing supporting services for other establishments of the same company rather than for the general public or for other business firms. Auxiliaries include such diverse activities as research, development and testing laboratories of manufacturing firms developing new or improved products with the company's own funds or on Federal contract; central warehouses for the company's own merchandise; central garages for the company's own vehicles;...and sales promotion offices."

To be classified as an administrative or auxiliary office by the Bureau of the Census, an establishment must be part of a multi-location firm. It is classified as a separate administrative or auxiliary office if it is at a different location from the other establishment(s) it serves within the company or if it is at the same location as one of the company's establishments but also serves other establishments within the same company and does not operate as an integral part of the establishment where it is located. Therefore, a headquarters office for a firm which has all of its operations at the same location as the headquarters is not categorized as an administrative office for the purposes of the published data.

If an establishment meets the criteria of the administrative and auxiliary category it is placed in that category within the major economic sector of the firm it serves. For example, in the case of a trucking firm headquartered in Overland Park, separate data would be collected on the administrative and operations portions of the business at the Overland Park location. The employment and payroll data for the operations portion of the company would be classified under the subcategory of trucking and warehousing within the major category of transportation and public

utilities; the employment and payroll data for the administrative portion of the company would be classified under the subcategory of administrative and auxiliary offices within the same major category of transportation and public utilities. There is a separate administrative and auxiliary subcategory for most of the major sectors of the economy: mining; contract construction; manufacturing; transportation and other public utilities; wholesale trade; retail trade; finance, insurance and real estate; and services.

B. Basic Overland Park Data

Establishments, employment, payroll and establishment size data were analyzed on Overland Park for the years 1972, 1977 and 1982. This data is available at the two-digit SIC code level for two of the major sectors of the Overland Park economy: retail trade and services. Less detailed information is available for manufacturing and wholesale trade establishments. Information is also available for business services in Overland Park; however, administrative and auxiliary information is not available for the city.

Table 1, on the following page, compares employment growth in manufacturing with the wholesale trade, retail trade, services and business services sectors from 1972 to 1982 for Overland Park, Johnson County, the state of Kansas and the United States. In this table and in all other tables and discussion on published data in Section IV of this paper, Services is defined to include hotels, personal, business, legal, educational, social and other services, but not the wholesale, retail or

finance sectors. The figures in table 1 provide the percentage changes in the number of employees, but do not account for changes in the number of hours worked per worker in each industry. Therefore, these figures are a general indicator of the employment growth in these sectors. A more precise indicator would be employment adjusted for the number of hours worked, but this information is not available; however, because of the dramatic differences in the percentage growth at the local level compared with those at the state and national level, even this general indicator is evidence of the high local growth in services.

TABLE 1
REGIONAL AND NATIONAL EMPLOYMENT GROWTH
1972-1982

		PERCENTAGE EMPLOYMENT GROWTH (PAID EMPLOYEES)			
INDUSTRY	PERIOD	OVERLAND PARK	JOHNSON COUNTY	KANSAS	UNITED STATES
Manufacturing	1972-77	18.8%	42.7%	22.2%	3.0%
SIC 20-39	1977-82	21.1%	29.3%	1.5%	-2.5%
Wholesale Trade	1972-77	97.9%	75.5%	20.6%	9.2%
SIC 50-51	1977-82	38.2%	35.4%	7.0%	13.4%
Retail Trade	1972-77	67.6%	51.8%	23.0%	16.3%
SIC 52-59	1977-82	9.9%	22.3%	5.6%	10.9%
Other Services (including Business Services) SIC 70-89	1972-77	58.8%	48.9%	20.9%	19.5%
	1977-82	196.0%	135.8%	92.5%	75.3%
Business Services	1972-77	32.2%	98.3%	51.6%	30.6%
SIC 73	1977-82	442.6%	136.5%	41.8%	27.1%

Sources: U.S. Department of Commerce, Bureau of the Census,
"Census of Retail Trade,"
"Census of Wholesale Trade,"
"Census of Manufactures,"
"Census of Service Industries," 1972, 1977, 1982.

As this table shows, during the 1972-1977 period, employment growth in Overland Park exceeded the county, state and nation in the retail, service and wholesale sectors. In manufacturing and business services, the city's growth was lower than that in the county or state, but still exceeded the nation's growth.

During the 1977-1982 period, growth in retail trade employment diminished substantially, trailing the county and nation, yet exceeding growth in the state. In all other sectors shown, Overland Park exhibited high growth. Although the percentage growth in manufacturing employment in Overland Park did not exceed the county's growth, it was significantly greater than growth in the state or nation. Wholesale trade also showed very high growth for the city and county. But it is services, and specifically business services, which grew at exceptionally high rates during the 1977-1982 period. During these five years, employment in business services more than quadrupled in Overland Park, while employment in the broader category of services doubled in Overland Park. The 442.6% gain in business services employment in Overland Park compares with a 27.1% gain for the same five years in the nation. These five years were a boom period for business services in the city and county.

Table 2 gives figures for the same economic sectors for number of establishments, sales, payroll, number of employees and establishment size. Unfortunately, the number of establishments and amount of sales for services and business services is not available for 1982, so growth in these sectors cannot be compared with that in the other sectors. In terms of the size of establishments, services and business services show the greatest growth. Business services doubled in average size over the 1972-1982 period. The

TABLE 2
ESTABLISHMENTS, SALES, PAYROLL, AND EMPLOYMENT, BY MAJOR INDUSTRY
OVERLAND PARK
1972, 1977, 1982

INDUSTRY	NUMBER OF ESTABLISHMENTS	SALES* ($1,000)	PAYROLL ENTIRE YEAR ($1,000)	PAID EMPLOYEES MARCH 12 (NUMBERS)	AVERAGE SIZE OF ESTABLISHMENT WITH PAYROLL
Manufacturing					
1972	43	37,000	11,100	1,600	37.2
1977	52	49,400	17,200	1,900	36.5
1982	91	137,700	41,500	2,300	25.3
Wholesale Trade					
1972	137	774,710	16,500	1,498	10.9
1977	252	3,624,859	49,718	2,964	11.8
1982	404	5,435,678	96,060	4,096	10.1
Retail Trade					
1972	671	261,562	30,996	5,703	15.5
1977	764	502,114	60,908	9,556	16.2
1982	974	756,328	88,733	10,505	15.0
Other Services (including Business Services)					
1972	551	37,721	10,939	1,859	7.7
1977	836	87,637	23,618	2,952	8.5
1982	D	D	116,432	8,739	10.3
Business Services					
1972	159	10,063	3,135	426	7.5
1977	275	18,960	5,257	563	5.6
1982	D	D	35,203	3,055	15.1

D: Data suppressed for confidentiality reasons
*: Sales values represent value of shipments for manufacturing, sales for wholesale and retail trade, and receipts for services and business services.

Sources: U.S. Department of Commerce, Bureau of the Census, "Census of Retail Trade," "Census of Wholesale Trade," "Census of Manufactures," "Census of Service Industries," 1972, 1977, 1982.

retail and wholesale sectors remained stable in size, while manufacturing establishments declined in size over the period.

C. Basic Johnson County Data

Availability of Data. More detailed and recent information is available for Johnson County than for Overland Park. Number and size of establishments and employment information is presented for the Administrative and Auxiliary sectors and the number of establishments, employment and payroll are presented for the business services category. Employment data is also presented and analyzed for all major and two-digit SIC code level sectors for Johnson County. Unfortunately, for many of the two-digit SIC code level sectors, including business services and administrative and auxiliary establishments, data is frequently suppressed in county figures to protect establishments' privacy. Thus, quantitative analysis of the data series is not always possible due to suppression and, therefore, payroll information for administrative and auxiliary firms and establishment size information for business services are not presented.

High Growth Industries. Table 3 presents employment growth percentages for Johnson County, Kansas and the United States over the 1980-1985 period. During this period, Johnson County's growth in total private employment exceeded that in both the state and nation: employment in the county increased 27.8%, while state and national employment increased by 2.7% and 8.4%, respectively.

Employment in all major sectors of the county economy increased over the period, with the exception of contract construction. This was also true for statewide employment in all major sectors except manufacturing and

contract construction, which both declined. Nationally, all sectors exhibited increases except mining and manufacturing, which declined, and contract construction, which remained stable.

The fastest growing categories for the nation, in order of decreasing percentage growth, were nonclassifiable establishments; agricultural services; services; finance, insurance and real estate; and retail trade, each of which increased in employment by over ten percent from 1975 to 1985. At the state level, sectors which exhibited employment increases of ten percent or more were nonclassifiable establishments; agricultural services; services; and mining, in order of decreasing percentage growth. In Johnson County, the fastest growing major sectors were services; finance, insurance and real estate; wholesale trade; retail trade; and transportation and other public utilities. Mining, nonclassifiable establishments and agricultural services also had high percentage emplomen growth, but the high percentage growth in the agricultural services and mining sectors at the county level did not have much significance given these sectors' small size. Growth in the nonclassifiable establishments sector merely represents an increase in the number of establishments which did not provide enough information about the nature of their business so that they could be classified according to SIC codes.

The services; finance, insurance and real estate; retail trade; wholesale trade; and transportation and other public utilities provided the most significant additions to employment in terms of the number of net new jobs. (See Table 4.) The services sector provided the greatest number of additional jobs, 12,421, followed by retail trade with 5,244, finance, insurance and real estate with 4,151, wholesale trade with 3,053,

TABLE 3
EMPLOYMENT GROWTH IN JOHNSON COUNTY, KANSAS AND THE UNITED STATES, 1980-85

SIC	INDUSTRY	EMPLOYMENT JOHNSON CO 1980	EMPLOYMENT JOHNSON CO 1985	JOHNSON CO GROWTH RATE 1980-85	KANSAS GROWTH RATE 1980-85	U.S. GROWTH RATE 1980-85
--	TOTAL	101,769	130,013	27.75%	2.71%	8.38%
--	Agricultural Services, Forestry, Fisheries	468	831	77.56%	42.08%	31.44%
--	Mining	53	435	720.75%	11.41%	-5.14%
--	Contract Construction	7,918	7,647	-3.42%	-15.38%	0.15%
15	General Contractors & Operative Builders	G	1,957		-18.59%	-7.53%
16	Heavy Construction Contractors	1,926	G		-28.64%	-19.20%
17	Special Trade Contractors	4,547	4,418	-2.84%		11.11%
--	Manufacturing	21,845	22,956	5.09%	-10.06%	-8.18%
20	Food and Kindred Products	1,536	1,154	-24.87%	13.84%	-6.28%
23	Apparel & Other Textile Products	G	G		4.92%	-12.45%
24	Lumber and Wood Products	198	308	55.56%	-15.12%	-7.38%
25	Furniture and Fixtures	C	B		-36.14%	1.17%
26	Paper and Allied Products	282	639	126.60%	9.03%	-5.81%
27	Printing and Publishing	2,843	4,395	54.59%	10.19%	12.37%
28	Chemicals and Allied Products	1,779	2,205	23.95%	-3.24%	-7.19%
29	Petroleum and Coal Products	C	C		-39.06%	-15.09%
30	Rubber and Miscellaneous Plastics Products	1,229	1,106	-10.01%	0.79%	-0.44%
32	Stone, Clay and Glass Products	272	539	98.16%	-16.09%	-13.74%
33	Primary Metal Industries	C	C		-35.52%	-33.61%
34	Fabricated Metal Products	726	696	-4.13%	-22.71%	-10.53%
35	Machinery, Except Electrical	999	1,605	60.66%	-31.50%	-15.96%
36	Electric and Electronic Equipment	5,328	4,414	-17.15%	-8.06%	2.77%
37	Transportation Equipment	104	B		-9.24%	-4.61%
38	Instruments and Related Products	F	712		-11.96%	-4.36%
39	Miscellaneous Manufacturing Products	324	367	13.27%	-33.30%	-13.79%
--	Administrative and Auxiliary	H	G		-8.95%	-2.37%
--	Transportation and Other Public Utilities	5,695	6,794	19.30%	1.38%	4.16%
41	Local and Interurban Passenger Transit	E	E		-28.11%	-0.66%
42	Trucking and Warehousing	1,610	2,095	30.12%	-9.11%	0.15%
45	Transportation by Air	226	419	85.40%	74.52%	11.18%
47	Transportation Services	250	532	112.80%	24.12%	30.17%
48	Communication	2,101	2,811	33.79%	-4.20%	-2.52%
--	Administrative and Auxiliary	904	592	-34.51%	20.57%	42.54%
--	Wholesale Trade	10,065	13,118	30.33%	0.04%	7.93%
50	Wholesale Trade-Durable Goods	6,528	8,632	32.23%	-0.17%	6.87%
51	Wholesale Trade-Nondurable Goods	2,717	3,622	33.31%	2.47%	9.23%

TABLE 3
EMPLOYMENT GROWTH IN JOHNSON COUNTY, KANSAS AND THE UNITED STATES, 1980-85

SIC	INDUSTRY	EMPLOYMENT JOHNSON CO 1980	EMPLOYMENT JOHNSON CO 1985	JOHNSON CO GROWTH RATE 1980-85	KANSAS GROWTH RATE 1980-85	U.S. GROWTH RATE 1980-85
--	Retail Trade	24,446	29,690	21.45%	6.59%	11.99%
52	Building Materials & Garden Supplies	757	F		0.77%	9.44%
53	General Merchandise Stores	4,044	4,151	2.65%	-0.85%	-1.19%
54	Food Stores	2,138	3,116	45.74%	12.56%	16.62%
55	Automotive Dealers & Service Stations	2,481	2,846	14.71%	-4.16%	6.31%
56	Apparel and Accessory Stores	2,080	2,329	11.97%	0.74%	9.51%
57	Furniture and Home Furnishings Stores	1,104	1,604	45.29%	8.21%	9.27%
58	Eating and Drinking Places	5,897	7,995	35.58%	11.82%	18.03%
59	Miscellaneous Retail	4,606	5,124	11.25%	7.93%	11.46%
--	Administrative and Auxiliary	1,339	G		14.02%	19.23%
--	Finance, Insurance and Real Estate	11,317	15,468	36.68%	9.65%	13.40%
60	Banking	1,521	1,657	8.94%	4.89%	5.31%
61	Credit Agencies Other than Banks	1,292	1,647	27.48%	13.51%	26.46%
62	Security, Commodity Brokers & Services	C	452		84.93%	57.01%
63	Insurance Carriers	5,185	5,710	10.13%	-1.92%	1.24%
64	Insurance Agents, Brokers & Service	1,185	1,974	66.58%	25.35%	19.57%
65	Real Estate	1,380	3,161	129.06%	12.36%	15.71%
67	Holding & Other Investment Offices	449	664	47.88%	58.68%	38.86%
--	Administrative and Auxiliary	C	192		3.28%	33.33%
--	Services	19,346	31,767	64.20%	17.04%	25.35%
70	Hotels and Other Lodging Places	820	2,071	152.56%	8.88%	16.42%
72	Personal Services	1,510	2,264	49.93%	10.75%	12.16%
73	Business Services	4,047	8,651	113.76%	56.98%	42.83%
75	Auto Repair, Services & Garages	531	1,019	91.90%	28.00%	20.71%
76	Miscellaneous Repair Services	269	408	51.67%	-3.87%	2.36%
78	Motion Pictures	F	C		-35.17%	9.71%
79	Amusement & Recreation Services	1,394	1,181	-15.28%	-2.01%	8.78%
80	Health Services	5,454	7,506	37.62%	4.71%	20.51%
81	Legal Services	494	717	45.14%	23.66%	36.15%
82	Educational Services	911	1,384	51.92%	28.15%	22.22%
83	Social Services	608	1,188	95.39%	33.96%	26.22%
86	Membership Organizations	1,211	2,301	90.01%	23.68%	27.75%
89	Miscellaneous Services	1,338	2,438	82.21%	22.72%	38.23%
--	Administrative and Auxiliary	C	451		87.94%	43.67%
--	Nonclassifiable Establishments	616	1,307	112.18%	46.00%	86.39%

Suppressed data:
A:0-19; B:20-99; C:100-249; E:250-499; F:500-999; G:1,000-2,499; H:2,500-4,999;
I:5,000-9,999; J:10,000-24,999; K:25,000-49,999; L:50,000-99,999; M:100,000 or more.

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

manufacturing with 1,111, and transportation and other public utilities with 1,099.

At the two-digit SIC code level, the ten fastest growing sectors in the county during the 1980-1985 period, in order of decreasing percentage growth, were hotels and other lodging places (153%), real estate (129%), paper and allied products (127%), business services (114%), transportation services (113%), stone, clay and glass products (98%), social services (95%), auto repair (92%), membership organizations (90%), and transportation by air (85%). Those sectors which provided the greatest number of additional jobs were business services, wholesale trade in durable goods, health services, general contract construction, real estate, printing and publishing, hotels and other lodging places, miscellaneous services, and membership organizations.

Administrative and Auxiliary Establishments. The annual data series for the number of administrative and auxiliary establishments is complete, without suppression, for the 1970-1985 period (see Table 5). As of 1985, the United States Bureau of the Census categorized 132 Johnson County establisments in this classification. This represents a 20% increase during the 1980-1985 period for the county, compared with a 9% increase in the number of administrative and auxiliary establishments for the nation over the same period.

These establishments have met the criteria of the U.S. Bureau of the Census, as described earlier in this report, in order to have been included as an administrative and auxiliary establishment. Although other Overland Park establishments may also be headquarters for their firm, they are not

TABLE 4
FASTEST GROWING SECTORS IN JOHNSON COUNTY, 1980-85

INDUSTRY	NET NEW JOBS JOHNSON CO. 1980-85	EMPLOYMENT JOHNSON CO. 1985	% GROWTH JOHNSON CO. 1980-85	% GROWTH UNITED STATES 1980-85
Business Services	4,604	8,651	113.76%	42.38%
Wholesale Trade - Durable Goods	2,104	8,632	32.23%	6.87%
Eating and Drinking Places	2,098	7,995	35.58%	18.03%
Health Services	2,052	7,506	37.62%	20.51%
Real Estate	1,781	3,161	129.06%	15.71%
Printing and Publishing	1,552	4,395	54.59%	12.37%
Hotels and Other Lodging Places	1,251	2,071	152.56%	16.42%
Miscellaneous Services	1,100	2,438	82.21%	38.23%
Membership Organizations	1,090	2,301	90.01%	27.75%
Food Stores	978	3,116	45.74%	16.62%
Wholesale Trade - Nondurable Goods	905	3,622	33.31%	9.23%
Insurance Agents, Brokers & Service	789	1,974	66.58%	19.57%
Personal Services	754	2,264	49.93%	12.16%
Communication	710	2,811	33.79%	-2.52%
Machinery, Except Electrical	606	1,605	60.66%	-15.96%

Source: U.S. Department of Commerce, Bureau of the Census. "County Business Patterns," 1980, 1985.

TABLE 5
ADMINISTRATIVE & AUXILIARY ESTABLISHMENTS
JOHNSON COUNTY
1970-85

YEAR	Mining	Construc-tion	Manufac-turing	Transpor-tation & Other PU	Wholesale Trade	Retail Trade	FIRE	Services	Total Adm & Aux Establ
1970	0	0	13	2	11	10	0	0	36
1971	0	0	12	2	8	12	0	0	34
1972	0	3	12	2	11	11	0	0	39
1973	0	0	19	1	13	11	0	0	44
1974	0	0	17	2	19	29	3	0	70
1975	0	0	19	2	20	32	5	0	78
1976	0	0	19	2	22	33	5	0	81
1977	0	0	23	2	23	37	6	0	91
1978	0	0	24	3	26	43	7	11	114
1979	0	0	29	3	18	43	7	10	110
1980	0	0	28	5	17	41	9	10	110
1981	0	0	28	6	21	39	7	11	112
1982	0	0	33	7	21	46	7	15	129
1983	0	0	32	8	24	46	6	14	130
1984	0	0	34	8	18	43	6	12	121
1985	2	0	39	7	18	45	6	15	132

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns," annual.

included as an administrative establishment if the headquarters is also the only location of the firm, or if the firm could not provide enough information on the separate headquarters functions of the business. This data must be interpreted in light of these criteria.

As categorized according to the U.S. Bureau of Census' criteria, those administrative and auxiliary classifications which have been increasing in number of establishments in Johnson County in the last five to six years are manufacturing and services. The number of administrative and auxiliary establishments classified under transportation and public utilities, retail trade, and finance, insurance and real estate has remained relatively stable, whereas the number in wholesale trade has fallen in the last two years shown.

Employment figures are much harder to analyze due to data suppression (see Table 6). As of 1985, administrative and auxiliary establishments in retail trade and manufacturing had the greatest number of employees. Each had between 1,000 and 2,499 employees involved in administrative and auxiliary functions. They were followed in order of decreasing number of administrative and auxiliary employees by wholesale trade; transportation and other public utilities; services; finance, insurance and real estate; and mining.

From the data which is available, a trend toward decreasing administrative and auxiliary employment can be seen in manufacturing and transportation and public utilities. Administrative and auxiliary employment in the services grew between 1980 and 1981 and appears to have remained fairly stable since then. Finance, insurance and real estate also

TABLE 6
EMPLOYMENT IN ADMINISTRATIVE & AUXILIARY ESTABLISHMENTS*
JOHNSON COUNTY
1970-85

YEAR	Mining	Construc-tion	Manufac-turing	Transpor-tation & Other PU	Wholesale Trade	Retail Trade	FIRE	Services	Total Admin & Aux Establ (except undisclosed
1970	0	0	758	D	284	755	0	0	1797
1971	0	0	943	D	196	647	0	0	1786
1972	0	D	1,003	D	288	D	0	0	1291
1973	0	0	1,100	D	279	D	0	0	1379
1974	0	0	1,074	F	1,125	G	82	0	3781-5779
1975	0	0	1,964	F	G	G	57	0	4521-8018
1976	0	0	2,231	E	G	G	70	0	4551-7798
1977	0	0	G	E	G	1,227	88	0	3565-6812
1978	0	0	H	629	G	1,503	C	C	5832-10128
1979	0	0	4,163	656	F	G	C	E	6669-9065
1980	0	0	H	904	820	1,339	C	C	5763-8560
1981	0	0	3,626	788	F	1,149	C	E	6413-7310
1982	0	0	2,099	724	F	G	C	463	4886-7033
1983	0	0	2,129	788	F	G	170	454	5041-7039
1984	0	0	G	584	672	1,741	207	E	4454-6202
1985	C	0	G	592	864	G	192	451	4199-7346

A:0-19; B:20-99; C:100-249; E:250-499; F:500-999; G:1000-2499; H:2500-4999; I:5000-0000; J:10000-24999; D:undisclosed data

*Employment at mid-March pay period.

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns," annual.

appears to have remained stable in terms of administrative and auxiliary employment. The range of the total number of Johnson County employees in administrative and auxiliary establishments was somewhat lower in 1985 than it was in either 1975 or 1980; however, because the ranges are so large it is impossible to determine whether county employment in administrative and auxiliary establishments has decreased, remained stable or increased.

Despite the suppression of data, trends can also be seen in the figures for the average number of employees in some types of administrative and auxiliary classifications (Table 7). Administrative and auxiliary establishments in manufacturing and transportation and other public utilities have decreased in average size in the past ten years. Administrative and auxiliary establishments in finance, insurance and real estate doubled in average size sometime during the 1978-1983 period, and those in services appear to be fairly stable at about 30 employees per establishment. For other administrative and auxiliary classifications not enough information is provided to determine a trend.

Business Services. In previous sections of this report, it has been established that business services are one of the fastest growing sectors of the local economy. Tables which follow provide more detail on the growth of business services over the 1970-1985 period in Johnson County. Six of the three-digit or four-digit SIC code subsectors of business services are included and two related three-digit SIC code subsectors which fall under the miscellaneous services category - engineering, architectural, and surveying services and accounting, auditing, and bookkeeping services - are also included. Data on the number of establishments, number of employees,

TABLE 7
AVERAGE NUMBER OF EMPLOYEES IN ADMINISTRATIVE & AUXILIARY ESTABLISHMENTS*
JOHNSON COUNTY
1970-85

YEAR	Mining	Construc-tion	Manufac-turing	Transpor-tation & Other PU	Wholesale Trade	Retail Trade	FIRE	Services
1970	0.0	0.0	58.3	D	25.8	75.5	0.0	0.0
1971	0.0	0.0	78.6	D	24.5	53.9	0.0	0.0
1972	0.0	D	83.6	D	26.2	D	0.0	0.0
1973	0.0	0.0	57.9	0.0	21.5	D	0.0	0.0
1974	0.0	0.0	63.2	D	59.2	D	27.3	0.0
1975	0.0	0.0	103.4	D	D	D	16.1	0.0
1976	0.0	0.0	117.4	D	D	D	14.0	0.0
1977	0.0	0.0	D	D	D	33.2	14.7	0.0
1978	0.0	0.0	D	209.7	D	35.0	D	D
1979	0.0	0.0	143.6	218.7	D	D	D	D
1980	0.0	0.0	D	180.8	48.2	32.7	D	D
1981	0.0	0.0	129.5	131.3	D	29.5	D	D
1982	0.0	0.0	63.6	103.4	D	D	D	30.9
1983	0.0	0.0	66.5	98.5	D	D	28.3	32.4
1984	0.0	0.0	D	73.0	37.3	40.5	34.5	D
1985	D	0.0	D	84.6	48.0	D	32.0	30.1

*:Mid-March pay period

D:undisclosed data

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns," annual.

and annual payroll per employee are presented for the eight subsectors and also for the total business services category.

Table 8 shows a record of the number of establishments in the business services subsectors in Johnson County for the years 1970 to 1985. These percentages show that, among business services, the fastest growing subsectors, in terms of the number of establishments, have been management consulting & public relations and computer and data processing services. The number of these types of establishments has increased over five times during the 1975-1985 period, compared with a 102.9% increase in the total number of establishments in the county for the same period. Every business service subsector analyzed, except for credit reporting and collection, increased at a faster rate than the total for all county establishments, and all business service subsectors analyzed increased faster at the county level than at the national level.

High growth in computer and data processing services is also apparent in employment data for Johnson County. Employment in computer and data processing services in Johnson County increased over six-and-a-half times during the 1975-1985 period. (See Table 9.) Mailing, reproduction and stenographic services also showed dramatic growth with a 586.6% increase in employment. Compared with the rest of the county economy, the subsectors of business services showed very dramatic growth: private employment for the entire county increased by 107.7%. Compared with national employment growth rates in these subsectors, only the management consulting & public relations subsector did not grow faster than the national rate.

TABLE 8
NUMBER OF ESTABLISHMENTS IN BUSINESS SERVICES
JOHNSON COUNTY
1970-85

YEAR	73 Business Services	731 Advertising	732 Credit reporting and collection	733 Mailing, reproduction, stenographic	736 Personnel supply services	737 Computer & data processing services	7392 Management consulting & public relations	891 Engineering Architectural & Surveying Services	893 Accounting Auditing & Bookkeeping Services
1970	80	-	-	-	-	-	18	38	34
1971	96	10	4	-	-	-	19	38	30
1972	107	-	-	-	-	-	29	40	31
1973	121	-	-	-	-	-	30	41	37
1974	178	9	7	14	6	9	38	42	41
1975	193	13	10	18	9	11	37	40	50
1976	226	17	11	18	12	16	41	43	56
1977	271	27	14	17	15	24	54	57	81
1978	281	28	15	25	16	29	55	60	78
1979	314	22	17	35	17	26	60	64	81
1980	350	22	19	40	22	31	69	63	88
1981	408	25	18	43	30	38	79	58	99
1982	457	37	18	43	38	35	99	81	109
1983	564	42	20	60	39	52	119	85	133
1984	630	43	21	56	45	60	130	103	129
1985	665	43	18	60	49	68	119	116	144
Johnson County % Growth 1975-85	244.6%	230.8%	80.0%	233.3%	444.4%	518.2%	561.1%	205.3%	323.5%
U.S. % Growth 1975-85	110.0%	70.4%	4.1%	84.2%	82.6%	300.9%	145.6%	90.0%	94.3%

Source:
U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

TABLE 9
EMPLOYMENT IN BUSINESS SERVICES
JOHNSON COUNTY
1970-85

YEAR	73 Business Services	731 Advertising	732 Credit reporting and collection	733 Mailing, reproduction, stenographic	736 Personnel supply services	737 Computer & data processing services	7392 Management consulting & public relations	891 Engineering architectural & surveying services	893 Accounting auditing & bookkeeping services
1970	631	-	-	-	-	-	144	284	99
1971	943	24	116	-	-	-	200	237	88
1972	1,073	-	-	-	-	-	245	284	99
1973	1,347	-	-	-	-	-	301	349	119
1974	2,114	121	C	61	172	166	571	458	181
1975	2,139	135	114	67	C	224	536	471	190
1976	2,626	146	127	80	125	258	780	427	207
1977	3,310	233	214	B	320	266	654	566	317
1978	3,315	191	215	C	719	380	408	644	435
1979	3,812	215	183	C	475	389	602	792	455
1980	4,047	280	221	C	348	671	435	808	496
1981	4,549	246	E	204	655	604	529	839	547
1982	6,203	286	E	240	1,254	739	1,121	891	642
1983	6,593	307	E	448	1,047	966	986	778	588
1984	7,363	309	E	626	890	1,289	1,178	955	589
1985	8,651	396	C	460	1,275	1,710	1,244	1,340	714
Johnson County % Growth 1975-85	304.4%	193.3%	-	586.6%	-	663.4%	132.1%	184.5%	275.8%
U.S. % Growth 1975-85	118.4%	63.5%	18.1%	115.1%	204.4%	225.7%	172.0%	98.1%	91.9%

Suppressed data:
A:0-19; B:20-99; C:100-249; E:250-499; F:500-999; G:1,000-2,499; H:2,500-4,999; I:5,000-9,999; J:10,000-24,999; K:25,000-49,999; L:50,000-99,999; M:100,000 or more.

Source:
U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

Table 10 presents annual payroll per employee figures for the business service subsectors for the 1974 to 1985 period. For the entire business services category (SIC 73 only), growth in payroll per employee closely matched that for the nation from 1975 to 1985. Among the subsectors, advertising; mailing, reproduction & stenographic services; computer & data processing services; engineering, architectural & surveying services; and accounting, auditing & bookkeeping services all had greater growth in payroll per employee over the period at the county level than at the national level.

And, on the basis of annual payroll per employee, advertising; computer & data processing services; management consulting & public relations; and accounting, auditing & bookkeeping services all had higher annual payroll per employee in the county in 1985 than in manufacturing. Payroll per employee in manufacturing in Johnson County was $21,091 in 1985, compared with $27,106 in advertising, $27,021 in computer & data processing, $25,515 in management consulting & public relations, and $32,278 in accounting, auditing & bookkeeping services. Thus, according to these figures, there are several sectors among the services which are high-wage and have payroll levels which exceed those in manufacturing.

D. Location Quotients

By exporting goods and services outside the community, a sector imports wealth into the local economy and provides a base for the existence and growth of the rest of the local economy. Wealth imported into the local economy by the base sectors becomes multiplied as it is spent and respent on

TABLE 10
ANNUAL PAYROLL PER EMPLOYEE IN BUSINESS SERVICES (DOLLARS)
JOHNSON COUNTY
1970-85

YEAR	73 Business Services	731 Advertising	732 Credit reporting and collection	733 Mailing, reproduction, stenographic	736 Personnel supply services	737 Computer & data processing services	7392 Management consulting & public relations	891 Engineering Architectural & Surveying Services	893 Accounting Auditing & Bookkeeping Services
1974	8,308	7,430	D	5,787	2,488	12,723	14,105	7,464	12,987
1975	8,938	9,674	7,974	7,522	D	11,808	13,938	7,737	13,711
1976	8,850	10,658	8,276	7,388	5,312	11,469	11,112	7,913	14,693
1977	9,716	14,700	9,430	D	4,675	13,263	16,177	9,038	14,903
1978	9,732	15,853	8,047	D	5,453	13,253	14,483	9,099	17,964
1979	10,636	19,981	9,765	D	5,347	15,992	10,988	10,585	21,121
1980	12,977	18,957	11,154	D	7,681	19,627	15,126	12,438	22,840
1981	12,614	20,598	D	13,863	9,243	18,990	15,573	13,203	24,659
1982	12,724	22,685	D	13,542	5,970	20,935	13,878	13,776	28,169
1983	15,081	23,684	D	13,692	7,116	22,669	24,118	15,673	31,738
1984	18,895	25,903	D	20,113	10,382	30,311	23,932	18,565	32,383
1985	18,098	27,106	D	18,172	9,273	27,021	25,515	20,220	32,278
Johnson County % Growth 1975-85	102.5%	180.2%	-	141.6%	-	128.8%	83.1%	161.3%	135.4%
U.S. % Growth 1975-85	102.9%	110.9%	115.2%	92.3%	77.7%	117.6%	84.4%	106.9%	83.8%

D: Suppressed data

Source:
U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

local secondary goods and services, such as retail goods and personal services.

Location quotients are an inexpensive method for estimating which sectors of a regional economy are base or primary sectors, i.e., the exporting sectors which make up a part of that economy's "economic base." Location quotients are calculated by dividing an economic sector's share of local employment by the sector's share of national employment. If the ratio is greater than one, or in other words, if the sector makes up a larger share of the local economy than it does of the national economy, that economic sector is assumed to be a primary industry and part of the region's economic base. The theoretical argument for accepting this criterion is that a ratio which is greater than one implies such a sector is producing more than is likely to be needed for local consumption and is therefore likely to be exporting some of its goods or services outside the community.

Table 11 represents an application of this theory to the Johnson County economy. The percentage share of total employment for each two-digit SIC code level sector has been calculated for Johnson County and the United States. If the Johnson County percentage is greater, then this sector is theoretically an exporting sector and a part of the economic base. For those sectors which are at least ten percent greater in Johnson County, asterisks are marked to the left of the sector's name.

Looking at this table, one can see that, among major industries, agricultural services, wholesale trade, retail trade, and finance, insurance and real estate had a greater share of employment in the county than in the nation in 1985. Theory indicates that this is because the sectors exported outside the county. It is unusual, both within the state of Kansas and

TABLE 11
LOCATION QUOTIENT ANALYSIS
JOHNSON COUNTY AND THE UNITED STATES, 1985

SIC		INDUSTRY	EMPLOYMENT (% OF TOTAL) JOHNSON COUNTY	UNITED STATES	LOCATION QUOTIENT
--		TOTAL	100.00%	100.00%	
--	*	Agricultural Services, Forestry, Fisheries	0.64%	0.47%	1.36
--		Mining			
13		Oil and Gas Extraction	0.33%	1.16%	0.29
14	*	Nonmetallic Minerals, Except Fuels	C	0.59%	
--		Administrative and Auxiliary	0.15%	0.12%	1.20
			C	0.17%	
--		Contract Construction			
15		General Contractors & Operative Builders	5.88%	5.52%	1.07
16		Heavy Construction Contractors	1.51%	1.43%	1.05
17		Special Trade Contractors	G	0.85%	
			3.40%	3.21%	1.06
--		Manufacturing			
20		Food and Kindred Products	17.66%	23.96%	0.74
23		Apparel & Other Textile Products	0.89%	1.75%	0.51
24		Lumber and Wood Products	G	1.39%	
25		Furniture and Fixtures	0.24%	0.81%	0.29
26		Paper and Allied Products	B	0.61%	
27	*	Printing and Publishing	0.49%	0.76%	0.65
28	*	Chemicals and Allied Products	3.38%	1.75%	1.94
29		Petroleum and Coal Products	1.70%	1.06%	1.60
30		Rubber and Miscellaneous Plastics Products	C	0.16%	
31		Leather and Leather Products	0.85%	0.94%	0.90
32		Stone, Clay and Glass Products	B	0.19%	
33		Primary Metal Industries	0.41%	0.67%	0.62
34		Fabricated Metal Products	C	0.96%	
35		Machinery, Except Electrical	0.54%	1.85%	0.29
36	*	Electric and Electronic Equipment	1.23%	2.59%	0.48
37		Transportation Equipment	3.40%	2.57%	1.32
38		Instruments and Related Products	B	2.18%	
39		Miscellaneous Manufacturing Products	0.55%	0.76%	0.72
--		Administrative and Auxiliary	0.28%	0.47%	0.61
			G	1.59%	
--		Transportation and Other Public Utilities	5.23%	5.94%	0.88
41		Local and Interurban Passenger Transit	E	0.33%	
42		Trucking and Warehousing	1.61%	1.59%	1.02
45		Transportation by Air	0.32%	0.60%	0.54
46		Pipe Lines, Except Natural Gas	0.00%	0.02%	0.00
47	*	Transportation Services	0.41%	0.34%	1.20
48	*	Communication	2.16%	1.58%	1.37
--	*	Administrative and Auxiliary	0.46%	0.24%	1.91
--	*	Wholesale Trade	10.09%	6.93%	1.46
50	*	Wholesale Trade-Durable Goods	6.64%	3.90%	1.70
51		Wholesale Trade-Nondurable Goods	2.79%	2.68%	1.04
--	*	Administrative and Auxiliary	0.66%	0.36%	1.83

TABLE 11
LOCATION QUOTIENT ANALYSIS
JOHNSON COUNTY AND THE UNITED STATES, 1985

SIC		INDUSTRY	EMPLOYMENT (% OF TOTAL) JOHNSON COUNTY	UNITED STATES	LOCATION QUOTIENT
--	*	Retail Trade	22.84%	20.77%	1.10
52		Building Materials & Garden Supplies	F	0.72%	
53	*	General Merchandise Stores	3.19%	2.39%	1.33
54		Food Stores	2.40%	3.20%	0.75
55		Automotive Dealers & Service Stations	2.19%	2.29%	0.96
56	*	Apparel and Accessory Stores	1.79%	1.27%	1.41
57	*	Furniture and Home Furnishings Stores	1.23%	0.78%	1.59
58		Eating and Drinking Places	6.15%	6.54%	0.94
59	*	Miscellaneous Retail	3.94%	2.63%	1.50
--		Administrative and Auxiliary	G	0.96%	
--	*	Finance, Insurance and Real Estate	11.90%	7.40%	1.61
60		Banking	1.27%	1.96%	0.65
61	*	Credit Agencies Other than Banks	1.27%	0.92%	1.38
62		Security, Commodity Brokers & Services	0.35%	0.42%	0.84
63	*	Insurance Carriers	4.39%	1.54%	2.84
64	*	Insurance Agents, Brokers & Service	1.52%	0.68%	2.23
65	*	Real Estate	2.43%	1.41%	1.72
67	*	Holding & Other Investment Offices	0.51%	0.24%	2.14
--		Administrative and Auxiliary	0.15%	0.21%	0.72
--		Services	24.43%	26.56%	0.92
70	*	Hotels and Other Lodging Places	1.59%	1.56%	1.02
72		Personal Services	1.74%	1.32%	1.32
73	*	Business Services	6.65%	5.27%	1.26
75		Auto Repair, Services & Garages	0.78%	0.83%	0.94
76		Miscellaneous Repair Services	0.31%	0.40%	0.78
78		Motion Pictures	C	0.28%	
79		Amusement & Recreation Services	0.91%	0.95%	0.96
80		Health Services	5.77%	7.81%	0.74
81		Legal Services	0.55%	0.84%	0.65
82		Educational Services	1.06%	1.87%	0.57
83		Social Services	0.91%	1.59%	0.57
86		Membership Organizations	1.77%	1.91%	0.93
89	*	Miscellaneous Services	1.88%	1.58%	1.19
--	*	Administrative and Auxiliary	0.35%	0.30%	1.16
--		Nonclassifiable Establishments	1.01%	1.28%	0.78

"*" Indicates that percentage employment is higher for Johnson County than for the United States

Suppressed Data:
A:0-19; B:20-99; C:100-249; E:250-499; F:500-999; G:1,000-2,499; H:2,500-4,999; I:5,000-9,999; J:10,000-24,999; K:25,000-49,999; L:50,000-99,999; M:100,000 or more.

Source:
U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

within the United States for the retail trade sector to be an export-oriented sector; however, elements of Johnson County's retail sector do act as export-oriented sectors when they draw consumers in from outside the community and from across the state line. In fact, the location quotients method does not account for the amount of Johnson County trade created by its location on the state line. In this respect, the location quotients method is an understimate of the export activity of the county. It is also an underestimate of the total export activity of the county, whether local or distant, because it estimates exports net of imports not gross exports.

Those subsectors for which the location quotient was significantly greater than one in 1985 were printing and publishing, chemicals and allied products and electric and electronic equipment within manufacturing; communications and administrative and auxiliary establishments within transportation and other public utilities; durable goods trade and administrative and auxiliary establishments within wholesale trade; general merchandise, apparel and accessory, furniture and home furnishings, and miscellaneous stores within retail trade; credit agencies, insurance carriers, insurance agents and brokers, real estate, and holding and other investment offices within finance, insurance and real estate; and business and miscellaneous services (including engineering, architectural & surveying services and accounting, auditing & bookkeeping services) within services. Thus, these sectors are the exporting sectors of Johnson County's economic base according to the location quotients method.

However, these conclusions may need to modified in light of other influences. Some of these sectors may have made up a larger share of the county's economy because of overall county economic and population growth,

not because the sector is exporting. The real estate sector is one example of this. And certain other subsectors, such as those in manufacturing, are by the nature of the product produced, export-oriented, even though their share of employment is smaller locally than nationally. In addition, differences in the average number of hours worked per employee in the various industries in the county and in the nation can cause some differences in the proportions the industries take in the county and national economies.

Of the administrative and auxiliary categories, those within transportation and other public utilities, retail trade, wholesale trade and services had a greater share of employment than in the nation in 1985. Because of data suppression, one cannot determine if this was also true for mining and manufacturing. Under finance, insurance and real estate, the administrative and auxiliary category had a smaller share in the county than in the nation.

Due to suppression, it is also not possible to come up with an exact figure for the number of Johnson County employees in administrative and auxiliary establishments in 1985. It is possible to calculate a range: the number of administrative and auxiliary employees (using the specific Standard Industrial Classification code definition) in Johnson County in 1985 was between 5,247 and 7,346. This represented 4.0% to 5.7% of total employment in the county, based on U.S. Bureau of the Census figures in County Business Patterns. Nationally, based on the same data, 3.8% of all employees worked in administrative and auxiliary establishments in 1985, so the total administrative and auxiliary sector made up a larger share of the county's economy than the nation's. Since a majority of the administrative

and auxiliary establishments within Johnson County are located in Overland Park, the percentage of total private employment in administrative and auxiliary establishments in Overland Park could be expected to be an even higher percentage than that for the county economy, and proportionally would be even more significant a part of the city's economy.

In summary, the location quotient method indicates that Johnson County's economic base is made up of manufacturing sectors, communications firms, all wholesale trade sectors, some retail trade stores, several types of finance, insurance and real estate firms, some major service industries, and many of the administrative and auxiliary categories. Those two-digit SIC code level sectors which particularly stand out are printing and publishing, wholesale trade in durable goods, insurance carriers, insurance agents and brokers, real estate, and business services. In particular, the insurance carriers sector had a share of total employment that was three times as large for the county as for the nation.

E. Shift-Share Analysis

Another method used to compare regional and national employment patterns is shift-share analysis. With this method one can compare local and state, state and national, or local and national employment growth patterns and analyze the reasons behind the growth patterns. Employment growth for the smaller area is compared to that in the larger area. The employment growth is broken down to determine whether it is due to a national or state trend, an industry-specific trend, or a local trend.

Using this method, employment growth in Johnson County is compared with growth in the state and nation. Actual growth in a county economic sector

or industry is compared with growth that could have been expected if that industry or sector had grown at the same rate as the total national or state economy. For example, if the national employment growth rate for the entire economy was 10 percent for the years 1980 to 1985, the national growth effect for the county would be found by multiplying the county's employment in 1980 times 10 percent to find what county employment would have been in 1985 had the county grown at the same rate as the nation. The state growth effect is found by using the growth rate for the entire state economy. This can be done for the whole county economy or for specific sectors of the county economy. These are the state or national growth effects.

The industry mix effect is found by using the national or state growth rate for a particular industry. For example, if the trucking and warehousing industry grew 8 percent from 1980 to 1985 at the national level, one would multiply the county employment figure for trucking and warehousing in 1980 by 8 percent to find what the employment figure should have been in 1985 given the industry mix effect. The total industry mix effect for the county is the sum of what the industry mix effects for each separate industry were based on state or national growth rates for each industry. The county industry mix effect represents the overall mix of types of industries in the county. If the county has many industries which are growing fast at the national level and few of the industries which are growing slowly at the national level, the industry mix effect will be large.

The local share effect represents the effect of the dynamics of the local economy itself. If a county economy gained 25,000 jobs between 1980 and 1985, and only 10,000 of those jobs could be attributed to either the national growth effect or the industry mix effect, 15,000 jobs could then be

attributed to the dynamics of the local economy. A local economy which is growing faster than would be expected due to overall national growth or growth in the types of industries which make it up has a positive local share effect. The three effects together - the national or state growth effect, industry mix effect and local share effect - add up to the change in employment for the county for the period.

Table 12 is a shift-share analysis comparing Johnson County and United States employment growth over the years 1980 to 1985. Of the 28,244 increase in employment in Johnson County, 8,533 jobs, or 30.2%, could have been expected if Johnson County employment had grown at the same rate as the total national economy; 18,953 or 67.1% could have been attributed to faster growth rates in county industries than in national ones. The 758 jobs due to the industry mix effect indicate that although the county economy is made up of many fast growing service industries, their effect is dampened by manufacturing sectors which are low-growth.

A look at the local share effect for every major industry in Johnson County during the 1980-1985 period shows that the majority of employment growth in each industry was due to dynamics of the local economy. A fast growing sector such as services, which could have grown by 3,283 jobs in the county based on the national growth rate, grew by 7,516 jobs due to the fact that service industries were growing much faster in the county than in the nation. Only nonclassifiable establishments, a category which represents businesses which cannot be classified by SIC code because of lack of information, would have been larger based on the national industry's rate than it turned out to be at the local level.

TABLE 12
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY & UNITED STATES, 1980-85

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN EMPLOY 1980-85	NATIONAL GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	TOTAL	28,244	8,533	758	18,953
--	Agricultural Services, Forestry, Fisheries	363	39	108	216
--	Mining	382	4	(7)	385
--	Contract Construction	(271)	664	(652)	(283)
15	General Contractors & Operative Builders				
16	Heavy Construction Contractors		161	(531)	
17	Special Trade Contractors	(129)	381	124	(634)
--	Manufacturing	1,111	1,832	(3,618)	2,898
20	Food and Kindred Products	(382)	129	(225)	(286)
23	Apparel & Other Textile Products				
24	Lumber and Wood Products	110	17	(31)	125
25	Furniture and Fixtures				
26	Paper and Allied Products	357	24	(40)	373
27	Printing and Publishing	1,552	238	113	1,200
28	Chemicals and Allied Products	426	149	(277)	554
29	Petroleum and Coal Products				
30	Rubber and Miscellaneous Plastics Products	(123)	103	(108)	(118)
32	Stone, Clay and Glass Products	267	23	(60)	304
33	Primary Metal Industries				
34	Fabricated Metal Products	(30)	61	(137)	46
35	Machinery, Except Electrical	606	84	(243)	765
36	Electric and Electronic Equipment	(914)	447	(299)	(1,062)
37	Transportation Equipment		9	(14)	
38	Instruments and Related Products				
39	Miscellaneous Manufacturing Products	43	27	(72)	88
--	Administrative and Auxiliary				
--	Transportation and Other Public Utilities	1,099	477	(241)	862
41	Local and Interurban Passenger Transit				
42	Trucking and Warehousing	485	135	(133)	483
45	Transportation by Air	193	19	6	168
47	Transportation Services	282	21	54	207
48	Communication	710	176	(229)	763
--	Administrative and Auxiliary	(312)	76	309	(697)
--	Wholesale Trade	3,053	844	(45)	2,254
50	Wholesale Trade-Durable Goods	2,104	547	(99)	1,655
51	Wholesale Trade-Nondurable Goods	905	228	23	654
--	Administrative and Auxiliary				

TABLE 12
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY & UNITED STATES, 1980-85

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN EMPLOY 1980-85	NATIONAL GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	Retail Trade	5,244	2,050	882	2,312
52	Building Materials & Garden Supplies		63	8	
53	General Merchandise Stores	107	339	(387)	155
54	Food Stores	978	179	176	623
55	Automotive Dealers & Service Stations	365	208	(51)	208
56	Apparel and Accessory Stores	249	174	23	51
57	Furniture and Home Furnishings Stores	500	93	10	398
58	Eating and Drinking Places	2,098	494	569	1,035
59	Miscellaneous Retail	518	386	142	(10)
--	Administrative and Auxiliary		112	145	
--	Finance, Insurance and Real Estate	4,151	949	568	2,635
60	Banking	136	128	(47)	55
61	Credit Agencies Other than Banks	355	108	233	13
62	Security, Commodity Brokers & Services				
63	Insurance Carriers	525	435	(370)	461
64	Insurance Agents, Brokers & Service	789	99	133	557
65	Real Estate	1,781	116	101	1,564
67	Holding & Other Investment Offices	215	38	137	41
--	Administrative and Auxiliary				
--	Services	12,421	1,622	3,283	7,516
70	Hotels and Other Lodging Places	1,251	69	66	1,116
72	Personal Services	754	127	57	570
73	Business Services	4,604	339	1,394	2,870
75	Auto Repair, Services & Garages	488	45	65	378
76	Miscellaneous Repair Services	139	23	(16)	133
78	Motion Pictures				
79	Amusement & Recreation Services	(213)	117	6	(335)
80	Health Services	2,052	457	661	933
81	Legal Services	223	41	137	44
82	Educational Services	473	76	126	271
83	Social Services	580	51	108	421
86	Membership Organizations	1,090	102	235	754
89	Miscellaneous Services	1,100	112	399	589
--	Administrative and Auxiliary				
--	Nonclassifiable Establishments	691	52	481	159

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

The analysis comparing Johnson County and United States employment growth for the 1975-80 period, as exhibited in Table 13, shows much the same picture. A majority, or 62.1%, of the county's 39,172 net additional jobs could be based on the dynamics of the county economy. The overall national employment growth rate would account for 14,817, or 37.8%, of the county's additional jobs. Only 63 jobs, or 0.02%, could be attributed to the county's industry mix effect.

In comparison with the state, the county's economy was growing even faster. (See Table 14.) During the 1980-1985 period, 25,092 jobs out of 28,244, or 88.6%, could have been attributed to faster growth in the county than in the state. If the county's employment had grown at the state's rate, it would have only increased by 2,754 jobs. In terms of industry mix, once again, Johnson County's high employment growth could not be attributed to keeping up with growth rates in individual state industries. The majority of growth was based on the booming county economy.

During the 1975-1980 period, the Kansas economy showed greater growth than it did during the 1980-1985 period. The shift-share in Table 15 shows that 44.2% of the growth in county employment could have been attributed to the state's growth rate and 57.3% of the growth was due to a faster growing county economy. Only 17,315 would have been gained if the county's employment had grown at the state rate; instead, 39,172 jobs were gained.

Thus, the four shift-share analyses - two comparing county employment growth with the nation's and two comparing it with the state's - all show the same result. The county's employment grew at a very fast pace because

TABLE 13
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY & UNITED STATES, 1975-80

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN JC EMPL 1975-80	NATIONAL GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	TOTAL	39,172	14,817	64	24,291
--	Agricultural Services, Forestry, Fisheries	288	43	46	200
--	Mining	(72)	30	18	(120)
--	Contract Construction	4,772	745	345	3,682
15	General Contractors & Operative Builders				
16	Heavy Construction Contractors	1,221	167	(33)	1,087
17	Special Trade Contractors	2,820	409	227	2,184
--	Manufacturing	8,369	3,190	(1,142)	6,321
20	Food and Kindred Products	769	182	(149)	737
23	Apparel & Other Textile Products				
24	Lumber and Wood Products	84	27	1	56
25	Furniture and Fixtures				
26	Paper and Allied Products				
27	Printing and Publishing	723	502	(150)	371
28	Chemicals and Allied Products	1,170	144	(78)	1,104
29	Petroleum and Coal Products				
30	Rubber and Miscellaneous Plastics Products	587	152	43	392
32	Stone, Clay and Glass Products	31	57	(33)	7
33	Primary Metal Industries				
34	Fabricated Metal Products	59	158	(28)	(71)
35	Machinery, Except Electrical	36	228	(29)	(163)
36	Electric and Electronic Equipment	1,554	893	181	480
37	Transportation Equipment				
38	Instruments and Related Products				
39	Miscellaneous Manufacturing Products	209	27	(18)	200
--	Administrative and Auxiliary		465	(147)	
--	Transportation and Other Public Utilities	1,877	904	(205)	1,178
41	Local and Interurban Passenger Transit				
42	Trucking and Warehousing	619	235	9	376
45	Transportation by Air				
47	Transportation Services				
48	Communication	865	293	(96)	669
--	Administrative and Auxiliary				
--	Wholesale Trade	3,287	1,604	(227)	1,910
50	Wholesale Trade-Durable Goods	2,558	940	20	1,598
51	Wholesale Trade-Nondurable Goods				

TABLE 13
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY & UNITED STATES, 1975-80

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN JC EMPL 1975-80	NATIONAL GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	Retail Trade	8,605	3,750	(165)	5,020
52	Building Materials & Garden Supplies				
53	General Merchandise Stores	1,286	653	(568)	1,201
54	Food Stores	362	420	(56)	(2)
55	Automotive Dealers & Service Stations	253	527	(368)	94
56	Apparel and Accessory Stores	906	278	(83)	711
57	Furniture and Home Furnishings Stores	420	162	(5)	263
58	Eating and Drinking Places	2,057	909	768	380
59	Miscellaneous Retail	2,835	419	(31)	2,447
--	Administrative and Auxiliary				
--	Finance, Insurance and Real Estate	4,044	1,722	72	2,250
60	Banking	369	273	10	86
61	Credit Agencies Other than Banks	690	142	77	471
62	Security, Commodity Brokers & Services				
63	Insurance Carriers	1,489	875	(315)	929
64	Insurance Agents, Brokers & Service	770	98	56	616
65	Real Estate	264	264	19	(19)
67	Holding & Other Investment Offices	247	48	(56)	255
--	Administrative and Auxiliary		13	39	
--	Services	7,944	2,699	1,383	3,862
70	Hotels and Other Lodging Places	216	143	35	38
72	Personal Services	508	237	(148)	418
73	Business Services	1,908	506	625	777
75	Auto Repair, Services & Garages	291	57	31	203
76	Miscellaneous Repair Services	86	43	30	12
78	Motion Pictures		58	(22)	
79	Amusement & Recreation Services	303	258	125	(80)
80	Health Services	2,302	746	333	1,223
81	Legal Services	225	64	68	93
82	Educational Services	290	147	37	106
83	Social Services	347	62	89	196
86	Membership Organizations	334	208	(49)	175
89	Miscellaneous Services	641	165	182	294
--	Administrative and Auxiliary				
--	Nonclassifiable Establishments	58	132	(62)	(12)

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

TABLE 14
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY AND KANSAS, 1980-85

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN EMPLOY 1980-85	STATE GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	TOTAL	28,244	2,753	398	25,092
--	Agricultural Services, Forestry, Fisheries	363	13	184	166
--	Mining	382	1	5	376
--	Contract Construction	(271)	214	(1,432)	947
15	General Contractors & Operative Builders				
16	Heavy Construction Contractors		52	(604)	
17	Special Trade Contractors	(129)			
--	Manufacturing	1,111	591	(2,789)	3,309
20	Food and Kindred Products	(382)	42	171	(595)
23	Apparel & Other Textile Products				
24	Lumber and Wood Products	110	5	(35)	140
25	Furniture and Fixtures				
26	Paper and Allied Products	357	8	18	332
27	Printing and Publishing	1,552	77	213	1,262
28	Chemicals and Allied Products	426	48	(106)	484
29	Petroleum and Coal Products				
30	Rubber and Miscellaneous Plastics Products	(123)	33	(24)	(133)
32	Stone, Clay and Glass Products	267	7	(51)	311
33	Primary Metal Industries				
34	Fabricated Metal Products	(30)	20	(185)	135
35	Machinery, Except Electrical	606	27	(342)	921
36	Electric and Electronic Equipment	(914)	144	(573)	(485)
37	Transportation Equipment		3	(12)	
38	Instruments and Related Products				
39	Miscellaneous Manufacturing Products	43	9	(117)	151
--	Administrative and Auxiliary				
--	Transportation and Other Public Utilities	1,099	154	(76)	1,020
41	Local and Interurban Passenger Transit				
42	Trucking and Warehousing	485	44	(190)	632
45	Transportation by Air	193	6	162	25
47	Transportation Services	282	7	54	222
48	Communication	710	57	(145)	798
--	Administrative and Auxiliary	(312)	24	161	(498)
--	Wholesale Trade	3,053	272	(268)	3,049
50	Wholesale Trade-Durable Goods	2,104	177	(188)	2,115
51	Wholesale Trade-Nondurable Goods	905	74	(7)	838

TABLE 14
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY AND KANSAS, 1980-85

SIC	INDUSTRY	ABSOLUTE CHG IN EMPLOY 1980-85	STATE GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	Retail Trade	5,244	662	948	3,634
52	Building Materials & Garden Supplies		20	(15)	
53	General Merchandise Stores	107	109	(144)	141
54	Food Stores	978	58	211	710
55	Automotive Dealers & Service Stations	365	67	(170)	468
56	Apparel and Accessory Stores	249	56	(41)	234
57	Furniture and Home Furnishings Stores	500	30	61	409
58	Eating and Drinking Places	2,098	160	538	1,401
59	Miscellaneous Retail	518	125	241	153
--	Administrative and Auxiliary		36	151	
--	Finance, Insurance and Real Estate	4,151	306	786	3,059
60	Banking	136	41	33	62
61	Credit Agencies Other than Banks	355	35	140	180
62	Security, Commodity Brokers & Services				
63	Insurance Carriers	525	140	(240)	625
64	Insurance Agents, Brokers & Service	789	32	268	489
65	Real Estate	1,781	37	133	1,610
67	Holding & Other Investment Offices	215	12	251	(48)
--	Administrative and Auxiliary				
--	Services	12,421	524	2,773	9,124
70	Hotels and Other Lodging Places	1,251	22	51	1,178
72	Personal Services	754	41	121	592
73	Business Services	4,604	110	2,196	2,298
75	Auto Repair, Services & Garages	488	14	134	339
76	Miscellaneous Repair Services	139	7	(18)	149
78	Motion Pictures				
79	Amusement & Recreation Services	(213)	38	(66)	(185)
80	Health Services	2,052	148	110	1,795
81	Legal Services	223	13	104	106
82	Educational Services	473	25	232	217
83	Social Services	580	16	190	373
86	Membership Organizations	1,090	33	254	803
89	Miscellaneous Services	1,100	36	268	796
--	Administrative and Auxiliary				
--	Nonclassifiable Establishments	691	17	267	408

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

of economic conditions specific to the area's economy. The overall national or state economies were not a major influence in the county's economic growth, nor was the industry mix effect - the county's growth could not be attributed merely to having a lot of sectors which are growing fast no matter where they are located in the nation. The majority of Johnson County's economic growth was due to the dynamics of the area economy and its ability to grow faster than the state, nation, or mix of industries would suggest it should have. Even some sectors which were low-growth nationally were high-growth, in relative terms, in Johnson County.

F. Summary

In summary, this section of the study has presented basic series of employment and establishment data for Overland Park and Johnson County and analyzed this data to construct a picture of the local economic base and evaluate its recent growth. Basic data for Overland Park and Johnson County shows that city and county employment by sector has grown at high rates compared to that for the state and nation during recent years. This is particularly true in the services, and specifically the business services, which expanded at exceptionally high rates in the city and county during the 1977-82 period. In terms of the average size of establishments, these two sectors exhibited a tendency toward larger establishments.

Data on administrative and auxiliary establishments is not available at the city level, and only partial data for this category was available at the county level. An analysis of this data indicated that for all categories of administrative and auxiliary establishments combined, the county had

TABLE 15
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY AND KANSAS, 1975-80

SHIFT-SHARE SIC	INDUSTRY	ABSOLUTE CHG IN JC EMPL 1975-80	STATE GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	TOTAL	39,172	17,315	(573)	22,430
--	Agricultural Services, Forestry, Fisheries	288	50	41	197
--	Mining	(72)	35	27	(134)
--	Contract Construction	4,772	870	391	3,510
15	General Contractors & Operative Builders	1,221	195	162	864
16	Heavy Construction Contractors	2,820	478	180	2,162
17	Special Trade Contractors				
--	Manufacturing	8,369	3,728	(200)	4,841
20	Food and Kindred Products	769	212	(212)	769
23	Apparel & Other Textile Products				
24	Lumber and Wood Products	84	32	11	41
25	Furniture and Fixtures				
26	Paper and Allied Products				
27	Printing and Publishing	723	586	(239)	376
28	Chemicals and Allied Products	1,170	168	87	915
29	Petroleum and Coal Products				
30	Rubber and Miscellaneous Plastics Products	587	178	(17)	426
32	Stone, Clay and Glass Products	31	67	(19)	(17)
33	Primary Metal Industries				
34	Fabricated Metal Products	59	185	(74)	(52)
35	Machinery, Except Electrical	36	266	(64)	(166)
36	Electric and Electronic Equipment	1,554	1,044	2,085	(1,575)
37	Transportation Equipment				
38	Instruments and Related Products				
39	Miscellaneous Manufacturing Products	209	32	(15)	192
--	Administrative and Auxiliary		543	378	
--	Transportation and Other Public Utilities	1,877	1,056	450	371
41	Local and Interurban Passenger Transit				
42	Trucking and Warehousing	619	274	292	53
45	Transportation by Air				
47	Transportation Services				
48	Communication	865	342	(92)	615
--	Administrative and Auxiliary				
--	Wholesale Trade	3,287	1,875	(775)	2,187
50	Wholesale Trade-Durable Goods	2,558	1,098	(189)	1,649
51	Wholesale Trade-Nondurable Goods				

TABLE 15
SHIFT-SHARE ANALYSIS OF JOHNSON COUNTY AND KANSAS, 1975-80

SIC	SHIFT-SHARE INDUSTRY	ABSOLUTE CHG IN JC EMPL 1975-80	STATE GROWTH EFFECT	INDUSTRY MIX EFFECT	LOCAL SHARE EFFECT
--	Retail Trade	8,605	4,382	(1,003)	5,226
52	Building Materials & Garden Supplies	1,286	763	(758)	1,281
53	General Merchandise Stores	362	491	(286)	157
54	Food Stores	253	616	(609)	246
55	Automotive Dealers & Service Stations	906	325	(100)	682
56	Apparel and Accessory Stores	420	189	(55)	285
57	Furniture and Home Furnishings Stores	2,057	1,062	577	418
58	Eating and Drinking Places	2,835	490	91	2,254
59	Miscellaneous Retail				
--	Administrative and Auxiliary				
--	Finance, Insurance and Real Estate	4,044	2,012	(105)	2,137
60	Banking	369	319	(68)	119
61	Credit Agencies Other than Banks	690	167	(10)	533
62	Security, Commodity Brokers & Services				
63	Insurance Carriers	1,489	1,022	0	467
64	Insurance Agents, Brokers & Service	770	115	141	514
65	Real Estate	264	309	(53)	9
67	Holding & Other Investment Offices	247	56	(80)	271
--	Administrative and Auxiliary		16	14	
--	Services	7,944	3,154	631	4,159
70	Hotels and Other Lodging Places	216	167	(142)	191
72	Personal Services	508	277	(194)	425
73	Business Services	1,908	592	365	952
75	Auto Repair, Services & Garages	291	66	(25)	250
76	Miscellaneous Repair Services	86	51	13	22
78	Motion Pictures				
79	Amusement & Recreation Services	303	302	(38)	39
80	Health Services	2,302	872	387	1,043
81	Legal Services	225	74	46	104
82	Educational Services	290	172	(94)	213
83	Social Services	347	72	54	220
86	Membership Organizations	334	243	20	72
89	Miscellaneous Services	641	193	266	183
--	Administrative and Auxiliary				
--	Nonclassifiable Establishments	58	154	(31)	(65)

Source: U.S. Department of Commerce, Bureau of the Census, "County Business Patterns."

increased by a greater percentage of number of establishments during 1980-1985 than the nation. Sectors which increased their number of administrative and auxiliary establishments were services and manufacturing.

Data on business services and its subsectors indicated that the number of establishments in all of the subsectors analyzed, increased by a higher percentage in Johnson County than in the nation during the 1975-1985 period. Employment also increased by a higher percentage at the county level in all subsectors of business services which were analyzed, except for management consulting & public relations. Annual payroll per employee in business services increased by approximately the same percentage both at the county and national levels overall. Payroll per employee in advertising, mailing, reproduction & stenographic services, computer & data processing services, engineering, architectural and surveying services, and accounting, auditing & bookkeeping increased faster at the county level. In addition, average payroll per employee in advertising, computer & data processing services, management consulting & public relations, and accounting, auditing & bookkeeping services all exceeded that in manufacturing.

The location quotient method was applied to 1985 employment data by sector for the county and nation. According to this method by comparing the percentage share of total employment for each sector of the county and national economies, one can develop an approximate list of which sectors make up the local economic base. Those sectors which had a significantly greater share of county employment than of national were a few manufacturing sectors, the communications sector of transportation and public utilities, all wholesale trade sectors, several retail sectors, insurance and other sectors of finance, insurance and real estate, and personal, business and

miscellaneous services within the service industry. The share of administrative and auxiliary employment in the county also exceeded the nation's and so this sector was a more important sector for the local economy than it was for the nation's.

The two kinds of firms that this portion of the study is focusing on, administrative and auxiliary establishments and business services, contributed between 13,898 and 15,997 jobs to the county economy in 1985. This represented between 10.7% and 12.3% of the county's total employment in 1985 - more than one out of every ten jobs in the county was a job in a headquarters, auxiliary or business service firm. This percentage could be expected to be even higher in the Overland Park economy, since the majority of Johnson County's administrative, auxiliary and business service firms are located within Overland Park.

Four out of every five jobs were in either services (using the broader definition of services which includes transportation; communications and utilities; finance, insurance and real estate; wholesale and retail trade; agricultural services; and other services) or administrative and auxiliary firms. This represented 79.1 to 80.8% of employment in Johnson County in 1985, compared with 69.8% nationally and 68.2% in the state.

In addition to the analysis of the composition of the county's economic base using the location quotient method, county employment data was also analyzed to determine the amount of and reasons for employment growth in the sectors of the county economy. Shift-share analysis was applied to employment data in order to compare county employment growth with that in the state and nation for the 1975-1980 and the 1980-1985 periods. The four resulting shift-share analyses provided much the same results: in all four

cases it was determined that the majority of employment growth in the county could be attributed to dynamics particular to the county economy, not to the influence of national or state employment growth. This pattern was also true at the level of individual economic sectors for most industries in the Johnson County economy: the majority of employment growth was attributed to the dynamics of the local economy. Local industries grew faster than their national or state counterparts.

Thus, the data series, as described and analyzed above, indicate that the Overland Park and Johnson County economies have been growing at much faster rates than the state's or the nation's. This data indicates that the classifications of administrative and auxiliary, business service and service establishments make up a significant portion of the local economy. The information also indicates that some subsectors within services pay as well or better than the overall manufacturing sector. This analysis confirms the importance of these sectors of the area's economy and the need for a study focused on these sectors to highlight their importance to the local, as well as the state, economy. This analysis provides a background for the remainder of this study.

V. QUESTIONNAIRE RESULTS

A. Description of the Survey

A list of export-oriented service and administrative firms located in Overland Park was developed from information in several business directories and publications: Standard & Poor's Register of Corporations, Directors and Executives, Sorkins's Directory of Business & Government, The Overland Park Chamber of Commerce's Membership Directory and Buyers' Guide, Firms Headquartered in Kansas, and The World of College Boulevard. An attempt was made to identify as many administrative, headquarters, auxiliary and export-oriented service firms as possible located in Overland Park. In general, establishments with fewer than 25 employees were not included; however, because of a lack of information on number of employees at the Overland Park location of a company, not all small companies were eliminated.

From this search, a list of 112 companies was developed and questionnaires were sent to all of these companies. The questionnaire included detailed questions on employment, sales, payroll, expenditures and taxes. Because of an inadequate response to this initial form, a second, shorter questionnaire was mailed to non-responding companies. The questionnaire is included in Appendix A. The sampling response rate was 28 percent.

Of the firms which completed the survey, 20 fit the necessary criteria to be considered an export-oriented service firm or headquarters firm of a company. The following statistics are based on these results. The number of employees in the 20 establishments is 4,373 - an average of 219 employees per establishment. In comparison with the size distribution of service firms found in U.S. Bureau of Census data for Johnson County the sample is

over-represented by larger, headquarters and administrative firms and under-represented by smaller, regional service firms. Of the 20 firms responding, nine, or 45 percent, were large national or regional headquarters with an average of 418 employees in the Overland Park location surveyed. Eleven firms, or 55 percent, were smaller, regional firms with an average of 66 employees in the Overland Park location surveyed.

Survey results for the larger, national headquarters and regional division establishments were separated from those for the smaller, regional service establishments and analyzed separately to determine the differences in the initial economic impact of the two types of firms. The total initial economic impact for all regional service and headquarters firms combined has been calculated by using a weighted average of the two types of firms based on their estimated employment proportions in the Johnson County economy as found in U.S. Bureau of Census data in County Business Patterns. Approximately 13.5 percent of service/administrative firms are larger, headquarters-type firms and approximately 86.5 percent are smaller, regional service firms. Results from these three categories will be discussed here. The use of these statistics in the input-output model will be discussed in a separate section.

B. Description of Results

Tables 16 and 17 show the results of the questionnaire in terms of the assets and expenditures per 100 workers in regional export-oriented service firms and headquarters firms. The results have been calculated separately for the smaller, regional service firms and the larger, national or

TABLE 16
ASSETS AND EXPENDITURES IN JOHNSON COUNTY PER 100 EMPLOYEES IN AN EXPORT-ORIENTED JOHNSON COUNTY SERVICE FIRM

	REGIONAL SERVICE FIRMS	LARGE HEADQUARTERS FIRMS	TOTAL (weighted by size)*
CAPITAL ITEM			
Land	$81,226	$288,688	$109,441
Building	122,989	1,358,178	290,975
Office machinery & computers	298,973	448,359	319,289
Office furniture	234,932	486,856	269,194
Commercial and industrial machinery and equipment	1,027	16,463	3,126
Automobiles	2,174	14,764	3,886
OFFICE SPACE			
Office space rented (sq.ft)	17,730	10,494	16,746
Office space owned (sq.ft)	7,568	20,000	9,259
Total	25,298	30,494	26,005
ANNUAL EXPENDITURES			
Office machinery & equipment	$17,555	$126,155	$32,325
Office furniture	9,333	86,400	19,814
Commercial and industrial machinery and equipment	0	0	0
Automobiles	0	1,372	187
Other personal property	0	67,750	9,214
New construction	4,348	543,733	77,704
Rent payments	216,368	175,222	210,772
Interest payments	14,257	0	12,318
Business services	72,674	64,698	71,589
U.S. Mail	37,161	48,788	38,742
Other mail & phone	41,274	24,611	39,008
Air travel	8,348	53,070	14,430
Restaurant	7,939	9,723	8,182
Insurance	18,891	95,878	29,361
Utilities (all except phone)	13,336	10,758	12,985
Office supplies	36,188	20,416	34,043
Motor fuel	5,737	332	5,002
Total expenditures except payroll	$503,409	$1,328,906	$615,677
Payroll per 100 workers	$1,938,600	$3,829,000	$2,193,804
Payroll remaining in Johnson County	$1,686,582	$2,630,523	$1,814,014

*weighting explained in text

Source: Survey for the Overland Park Study of Service and Administrative Firms. Institute for Public Policy and Business Research, 1988.

TABLE 17
EXPENDITURES IN KANSAS PER 100 EMPLOYEES IN A JOHNSON COUNTY EXPORT-ORIENTED SERVICE FIRM

	SMALL FIRMS	LARGE FIRMS	TOTAL (weighted by size)*
ANNUAL EXPENDITURES			
Office machinery & equipment	$17,555	$132,373	$33,170
Office furniture	9,333	86,400	19,814
Commercial and industrial machinery and equipment	0	0	0
Automobiles	0	21,996	2,991
Other personal property	0	101,624	13,821
New construction	4,348	565,799	80,705
Rent payments	218,554	175,222	212,661
Interest payments	14,257	0	12,318
Business services	135,592	107,848	131,819
U.S. Mail	37,561	48,788	39,088
Other mail & phone	51,879	85,636	56,470
Air travel	8,348	53,070	14,430
Restaurant	7,939	9,723	8,182
Insurance	21,374	96,886	31,644
Utilities (all except phone)	15,151	14,355	15,043
Office supplies	64,828	24,430	59,334
Motor fuel	7,783	9,648	8,037
Total expenditures except payroll	$614,502	$1,533,798	$739,526
Payroll per 100 workers	$1,938,600	$3,829,000	$2,193,804
Payroll remaining in Kansas	$1,704,029	$3,032,568	$1,883,382

*weighting explained in text

Source: Survey for the Overland Park Study of Service and Administrative Firms. Institute for Public Policy and Business Research, 1988.

divisional headquarters, as well as for the total sample. These figures represent the initial impact of 100 service workers employed by an export-oriented service or headquarters firm on Johnson County (Table 16) and Kansas, including Johnson County, (Table 17) before the additional effects of the respending of expenditure and payroll dollars. The tables show the amount of companies' expenditures made in the county and state.

The results for small firms and large firms, when compared, show that the larger firms own considerably more capital, have much higher overall expenditures and utilize more office space per 100 workers in both the county and the state. Larger firms tend to own more of their own land and buildings than smaller firms; smaller firms rent a higher percentage of their office space.

The results also show that, among expenditure items, larger firms make higher expenditures in the county and state for most items than do smaller firms per 100 workers. Payroll per 100 workers is higher in larger firms than in smaller firms. Smaller firms do make higher average rent, interest, business services, utilities and office supplies expenditures within the county and state than the larger firms per 100 workers. The smaller firms also spend more in the county on telephone and non-government mail and shipping services. For many of these items this is true because smaller firms utilize other local businesses more than larger firms, not because the smaller firms have higher total expenditures for such items. The large firms in the survey do not tend to borrow money locally or use local business services and utilities as much as small firms. Many large, divisional headquarters obtain insurance, office supplies, legal, accounting and other business service assistance through a national headquarters which

is out of state. Even so, the end result for total expenditures in Johnson County and Kansas is greater for the larger firms than for the smaller firms.

C. Estimate of the Total Number of Employees in the Export-Oriented Firms

Before being able to estimate the total economic impact or total tax revenue impact of regional service and headquarters establishments located in Johnson County, it is first necessary to determine the approximate number of workers in these firms. Total employment in Johnson County in April, 1988 was reported as 190,299 by the Kansas Department of Human Resources. Based on the U.S. Bureau of the Census' estimates, the proportion of all service workers (including transportation, communications, utilities, wholesale and retail trade, finance, insurance, real estate, and other services) in Johnson County in 1985 was approximately 75 percent. Using this same proportion, one can estimate that the total number of service workers in Johnson County in April 1988 was approximately 142,725.

In order to determine the number of these workers who are employed by service firms which export to other cities and states, data from a previous survey of businesses in mid-size Kansas communities was used. The survey covered 498 service firms (including transportation-communication, trade, finance and other services). Data from this study, Business Retention and Expansion in Mid-Size Kansas Communities, indicates that approximately 59 percent of service workers were employed by companies which exported some or all of their sales outside of the local or state markets, and approximately 39 percent of service products were exported outside the local market and 20 percent were exported outside the state market. Using these same

percentages, the number of Johnson County workers employed by service companies exporting outside the local or state markets would be 84,200 workers, the approximate number of jobs related to exports outside the local market would be 55,700 and the approximate number of jobs related to exports outside the state market would be 28,600. However, these numbers do not include many of the administrative and auxiliary workers which should also be included because they are service workers which are working to support export-oriented firms. Thus, using this method, the total number of employees working for export-oriented service or headquarters firms in Johnson County which provide their services to other cities and states can be estimated at about 89,000, an approximation of the number of jobs which are related to exports outside the local market would be 61,000, and an approximation of the number of jobs which are related to exports outside the state market would be 35,000.

It should be noted, that these are still underestimates for two reasons. Johnson County service firms can be expected to be more export-oriented in nature because of their location in a metropolitan area with better access to transportation and communication systems and because of their location near the border of another state. For these two reasons, the above estimates can be considered lower bounds of the number of export-oriented service and headquarters workers in Johnson County; because these figures are based on data on mid-size Kansas communities which are not on a state border they do a fair job of estimating distant exports to other cities and states, but do not adequately cover local exports across the state line.

In order to provide a better estimate which also includes service employment caused by local exports across the border and to other parts of the metropolitan area, the location quotients method is used. Location quotients are used to calculate the number of "surplus workers" in each service industry. We calculated the number of surplus workers by subtracting the number of workers which would be in the local industry if it had the same proportion of employment as in the national economy from the number of workers which actually are in the local industry. The surplus workers are an estimate of the net export-oriented workers in an economy. Then, to develop a crude estimate of the number of these which are involved in local exports, one subtracts the projected number of export-oriented workers using the data from the business retention study from the surplus workers using the location quotients method. The excess workers are a rough estimate of workers involved in local exports.

Using this method, it is estimated that there are approximately 1,973 jobs related to local exports which can be added to the above estimate of 89,000 jobs in export-oriented service and headquarters firms and there are approximately 4,230 jobs related to local exports which can be added to the estimate of 61,000 jobs due to service exports outside the local market. These are still somewhat conservative estimates because the location quotients method of calculating surplus workers represents exports net of imports, not gross exports. The extent of local gross exports is harder to estimate with either the data from the business retention study or with the location quotients method and is probably understated by both methods: therefore, 92,000 will be used as a best approximation of the total number of workers employed by export-oriented service and headquarters firms in

Johnson County for the remainder of this report. An estimate of 65,000 workers whose jobs are related to exports outside the local market and an estimate of 35,000 workers whose jobs are related to exports outside the state market will also be used. The figure of 65,000 workers whose jobs are related to exports outside the local market includes the 35,000 workers whose jobs are related to exports outside the state market.

In order to get better information on the extent of local exports, extensive direct surveys of consumers and firms in Johnson County could be conducted. Time series studies of sales in Johnson County by Standard Industrial Code as a function of income ratios and taxes could also be conducted with more resources.

Of the estimated 92,000 workers, approximately 28 percent live in Overland Park, 75 percent in Johnson County and 85 percent in the state of Kansas. About 15 percent live on the Missouri side of the line. These percentages are averages derived from information from the companies who participated in this survey. These companies responded to a question regarding where their payroll dollars go based on the residence of their employees.

VI. RESULTS OF THE INPUT/OUTPUT MODEL

A. Concepts and Methodology

An input-output model is a tool for regional economic impact analysis. It is a method of "arraying, processing, and analyzing data to enable an understanding of the interindustry structure of the economy and the implications of the unique structural independence that prevails." (Bendavid-Val, 1983) Such a model includes input-output (I-O) tables which are accounting frameworks that show industrial distributions of inputs purchased and outputs sold by an industry. Such a framework can be used to estimate the overall economic impact on a region from changes in expenditures in an industry. A total-requirements table is developed to show total purchases of inputs required throughout the economy per unit of output sold as a final purchase by an intermediate supplier. Such a table captures the total effect on a regional economy due to output sold by an industry - it captures the initial effects of the sale itself, as well as the secondary and later effects on the regional economy because of the sale.

A total-requirements table can be used to determine the multiplier effect of an initial economic change, such as an increase of 100 employees. A regional multiplier represents the total economic effect occuring in a region per unit of the direct economic change that caused the effect. This includes the direct effect brought about by the economic change, the indirect effect of jobs and production needed to support the production associated with the direct effect, and the induced effect of jobs and production needed to fulfill the household demands for goods and services generated by the wages of the employees associated with the direct and

indirect changes. These effects cause additional ripple effects which lead to additional, but ever-decreasing further effects.

Several types of regional multipliers can be calculated. Each kind of multiplier represents a ratio of a total effect (both direct and indirect) to an initial (or direct) effect. The units are different for the different multipliers. Output multipliers show the total sales or output resulting throughout the economy from an initial unit of exported sales or output purchased from a given industry. Earnings multipliers show the total earnings of households throughout the economy resulting from a dollar of exported output in a given industry. Employment multipliers show the number of jobs throughout the economy which result from one job producing exports in a given industry.

This study focuses on the economic impact of the administrative and service sectors on the rest of the Johnson County economy and on the state economy through the use of the input-output methodology. Ideally, an input-output model is developed through a direct survey of businesses to determine their demand for different kinds of locally produced inputs. These initial impacts or local demands for inputs can be used to calculate the secondary and additional rounds of inputs required. The multipliers developed can be used to analyze the economic impact of a particular sector within a local economy.

In practice, input-output models at the local level are usually developed by adapting survey data from national sources. The particular input-output model used in this study has been developed by using values from the national input-output model developed by the Bureau of Economic Analysis of the U.S. Department of Commerce. Adjustments were then made to

make the model specific to Johnson County. In particular, the location quotient technique was used to compare the relative importance of a sector in Johnson County to the relative importance of the same sector nationally. For a fuller description of the input-output model and the tables of multipliers, see Appendix B.

B. Results from the Input-Output Model

Tables 18 and 19 show the total sales, and additional earnings and employment effects caused by the respending of the initial dollars spent on goods, services and labor by an export-oriented service or headquarters firm per 100 employees. Table 18 shows that for every 100 export-oriented service or headquarters employees, approximately $1,700,000 is initially spent by the company and the workers on goods and services in Johnson County which causes about a total of $3,000,000 of sales in the county due to the multiplier effect. In addition, for every 100 of these workers, there is about an initial $1,500,000 of earnings plus $600,000 of additional earnings due to the multiplier effects, resulting in total earnings in the county of about $2,100,000. The total employment effect is an additional 36 jobs in the county for every 100 initial jobs.

Table 19 shows the effects on the state of Kansas. For every 100 export-oriented service or headquarters employees located in Johnson County, there is an initial expenditure in the state of about $1,900,000 and a total of $3,900,000 of sales in the state on goods and services due to the multiplier effect. The initial earnings due to the 100 workers are $1,600,000 plus $700,000 due to the multiplier effect, for a total earnings effect of $2,300,000 in the state. The total number of additional jobs in

TABLE 18
TOTAL ECONOMIC IMPACTS PER 100 EMPLOYEES IN AN EXPORT-ORIENTED JOHNSON COUNTY SERVICE FIR
ON EXPENDITURES, EARNINGS AND EMPLOYMENT IN JOHNSON COUNTY

Sector Description	INITIAL ANNUAL EXPENDITURES PER 100 EMPLOYEES	TOTAL SALES PER 100 EMPLOYEES	ADDITIONAL EARNINGS PER 100 EMPLOYEES	ADDITIONAL EMPLOYMENT PER 100 EMPLOYEES
livestock	$463	$773	$87	0.00
crops	$1,234	$2,271	$336	0.01
forestry	$0	$0	$0	0.00
agricultural services	$330	$691	$160	0.01
metal and nonmetalic mineral mining	$0	$0	$0	0.00
coal mining	$0	$0	$0	0.00
oil and gas production	$0	$0	$0	0.00
stone, gravel, and clay	$0	$0	$0	0.00
construction	$77,704	$153,653	$33,975	1.64
food processing	$54,139	$97,452	$13,398	0.74
tobacco processing	$0	$0	$0	0.00
fabrics and apparel	$29,277	$65,105	$13,584	0.85
lumber and wood	$165	$293	$62	0.00
furniture and fixtures	$20,546	$41,513	$10,028	0.56
paper products	$36,332	$67,153	$12,067	0.71
printing	$10,450	$24,518	$5,897	0.33
chemicals	$1,350	$2,733	$297	0.01
plastic materials and synthetics	$0	$0	$0	0.00
drugs and preparations	$18,523	$40,719	$6,777	0.33
paints	$0	$0	$0	0.00
petroleum refining	$28,598	$43,490	$2,222	0.10
rubber, rubber and misc. plastic prod	$5,577	$10,250	$2,184	0.13
leather products	$1,488	$2,887	$642	0.04
glass, stone, and clay products	$982	$2,010	$453	0.02
iron, steel, and other metals	$6	$11	$2	0.00
metal products, ordinance, structural	$1,230	$2,158	$493	0.02
engines and machinery	$853	$1,597	$391	0.02
computers, computing equipment	$32,717	$71,102	$16,720	0.80
electrical equipment and appliances	$15,964	$32,573	$7,653	0.40
electronic equipment and parts	$405	$893	$234	0.01
motor vehicles, aircraft, trans. equi	$1,180	$2,043	$445	0.02
scientific and photograhic equipment	$2,833	$5,781	$1,500	0.07
misc. manufacturing	$16,607	$31,769	$6,783	0.37
transportation and warehousing	$45,638	$90,041	$19,674	0.98
communications except radio and T.V.	$100,286	$179,430	$48,899	1.95
radio, T.V., business services	$89,294	$153,684	$32,834	1.83
electric services, utilities	$15,986	$23,821	$2,551	0.11
wholesale and retail trade	$228,102	$433,765	$114,658	6.56
finance, insurance	$86,663	$194,820	$55,979	2.71
real estate and rental	$405,586	$554,789	$39,359	2.29
hotels, personal services	$35,289	$66,726	$17,407	1.48
eating and drinking places	$79,524	$148,591	$28,079	2.90
automobile repair and services	$23,883	$40,024	$6,284	0.34
amusements	$11,058	$21,970	$4,733	0.41
health, education, social services	$180,781	$396,610	$131,051	7.53
TOTALS	$1,661,044	$3,007,711	$637,895	36.32

Source: Survey for the Overland Park Study of Administrative and Service firms. Institute for Public Policy and Business Research, University of Kansas, 1988

TABLE 19
TOTAL ECONOMIC IMPACTS PER 100 EMPLOYEES IN AN EXPORT-ORIENTED JOHNSON COUNTY SERVICE FIRM ON EXPENDITURES, EARNINGS AND EMPLOYMENT IN THE STATE OF KANSAS

Sector Description	INITIAL ANNUAL EXPENDITURE PER 100 EMPLOYEES	TOTAL SALES PER 100 EMPLOYEES	ADDITIONAL EARNINGS PER 100 EMPLOYEES	ADDITIONAL EMPLOYMENT PER 100 EMPLOYEES
livestock	$2,044	$5,735	$638	0.02
crops	$8,259	$16,942	$2,277	0.07
forestry	$114	$210	$25	0.00
agricultural services	$174	$409	$85	0.01
metal and nonmetalic mineral mining	$0	$0	$0	0.00
coal mining	$45	$88	$18	0.00
oil and gas production	$0	$0	$0	0.00
stone, gravel, and clay	$0	$0	$0	0.00
construction	$80,705	$173,287	$35,470	1.94
food processing	$120,078	$352,296	$44,707	2.26
tobacco processing	$0	$0	$0	0.00
fabrics and apparel	$13,288	$25,656	$4,960	0.34
lumber and wood	$309	$658	$127	0.01
furniture and fixtures	$22,500	$48,344	$10,875	0.66
paper products	$63,383	$142,168	$23,157	1.29
printing	$11,843	$30,881	$6,823	0.40
chemicals	$1,530	$3,722	$375	0.02
plastic materials and synthetics	$0	$0	$0	0.00
drugs and preparations	$20,993	$48,301	$7,417	0.38
paints	$106	$280	$39	0.00
petroleum refining	$61,608	$141,848	$7,325	0.37
rubber, rubber and misc. plastic prod	$7,227	$14,723	$2,864	0.15
leather products	$361	$725	$149	0.01
glass, stone, and clay products	$2,212	$5,625	$1,128	0.06
iron, steel, and other metals	$14	$28	$5	0.00
metal products, ordinance, structural	$1,743	$3,444	$729	0.04
engines and machinery	$1,662	$3,518	$804	0.04
computers, computing equipment	$33,403	$68,153	$14,954	0.76
electrical equipment and appliances	$6,665	$13,369	$2,933	0.16
electronic equipment and parts	$168	$382	$92	0.01
motor vehicles, aircraft, trans. equi	$49,502	$115,561	$23,675	1.08
scientific and photograhic equipment	$1,470	$3,104	$749	0.04
misc. manufacturing	$17,796	$35,470	$7,063	0.43
transportation and warehousing	$49,177	$112,220	$21,557	1.15
communications except radio and T.V.	$119,177	$215,514	$55,714	2.45
radio, T.V., business services	$143,708	$247,928	$50,116	3.17
electric services, utilities	$74,720	$176,444	$16,839	0.81
wholesale and retail trade	$238,746	$471,783	$116,304	7.91
finance, insurance	$80,784	$175,260	$47,905	2.63
real estate and rental	$349,598	$460,599	$29,011	1.83
hotels, personal services	$28,272	$55,637	$13,428	1.23
eating and drinking places	$81,046	$200,197	$33,303	3.65
automobile repair and services	$26,083	$52,670	$8,083	0.49
amusements	$9,356	$19,192	$3,824	0.37
health, education, social services	$177,435	$409,512	$125,948	8.75
TOTALS	$1,907,304	$3,851,885	$721,496	45.00

Source: Survey for the Overland Park Study of Administrative and Service firms. Institute for Public Policy and Business Research, University of Kansas, 1988

the state due to the initial 100 service jobs is 45, with 36 of these jobs in the county and 9 elsewhere in the state.

Because the total number of workers employed by export-oriented service and headquarters firms in Johnson County has been estimated to be, at least 92,000 (see section V.c. of this report), all of these impacts can be multiplied 920 times to estimate the total impacts of the export-oriented service and headquarters firms currently located in Johnson County. The total number of jobs which are supported by the 92,000 employees in Johnson County are approximately 133,500 in the state. There are about 33,200 additional jobs in the county and 8,300 in the state caused by the initial 92,000 jobs. The total expenditures caused by the location of these firms in Johnson County are approximately $3.5 billion in the state and $2.8 billion on the county. The total earnings effect on the state is approximately $2.2 billion and $2 billion on the county.

The approximate number of jobs actually due to service exports outside the local market is 65,000. Therefore, the economic impact estimates per 100 workers can be multiplied by 650 to estimate the total economic impact of the jobs which can be directly attributed to service exports outside the local market. Based on this figure, there are an additional 29,300 jobs throughout the state which are indirectly due to the initial 65,000 jobs in Johnson County. Of these 29,300 jobs, about 23,400 are in the county and about 5,900 are elsewhere in the state. Total sales in the state due to these 65,000 jobs related directly to service exports outside the local market are about $2.5 billion and total sales in the county due to these jobs are about $2.0 billion. Total earnings in the state due to these jobs

are about $1.5 billion and total earnings in the county due to these jobs are about $1.4 billion.

The total number of Johnson County service workers which are directly related to service exports outside the state market was estimated above to be approximately 35,000. Based on this figure, the total number of jobs throughout the state which are directly or indirectly due to Johnson County service exports outside the state is about 50,800. Of the 15,800 jobs which are indirectly related to Johnson County service exports outside the state, about 12,600 are in the county and about 3,200 are elsewhere in the state. Total sales in the county due to Johnson County service exports outside the state are approximately $1.1 billion and total sales in the state due to these exports are approximately $1.3 billion. Total earnings in the state due to these exports are approximately $800 million and total earnings in the county due to these exports are approximately $740 million.

VII. TAX REVENUE IMPLICATIONS

A precise estimate of the tax revenue impact on the state of Kansas attributable to the export-oriented service sector is beyond the scope of this study. Instead an approximate estimate based on the proportion of employment in this sector is calculated.

The total impact is made up of several taxes. The main ones paid by the export-oriented service and headquarters firms are corporate income tax and sales/compensating use tax. There is also an impact on the amount of taxes paid by individuals since these firms employ a significant number of individuals. The largest portion of taxes paid by individuals are income tax and sales tax. The impact of other taxes is relatively small and is not considered here.

All of these taxes, since they depend on income, will vary from year to year depending on national business conditions and conditions in Kansas. Since the rate of corporate income tax increases with income, the amount of tax collected also depends on the size of the firms, and personal income tax rates also increase with income. By considering tax revenue attributable to export-oriented services and headquarters as relatively proportional to employment in these sectors, one can use the percentage of total employment in Kansas to estimate the general tax revenue impact. This estimate is biased downward, that is, the actual amount is expected to be greater than this estimate. Since payroll in these industries is higher than the overall average in Kansas, and because of the progressive income tax, the contribution to total tax revenue will be greater than the estimate indicates.

The estimate of the number of individuals employed in export-oriented services and headquarters is 92,000. Since these companies and the employees of the companies spend a portion of their earnings in Johnson County and Kansas, the effect of these jobs is greater than just the initial 92,000 would indicate. From table 19, the Kansas multiplier is estimated to be 1.45. Thus, the amount of employment in the state of Kansas which is attributable to export-oriented services and headquarters located in Johnson County is 133,500. This is approximately 11 percent of total employment in Kansas, as of April 1988. Based on the assumption that this is proportional to tax collected, income tax collected due to these firms is approximately $106,600,000 and sales tax collected due to these firms is approximately $76,300,000. The estimated total sales and income tax impact would be $182,900,000.

Using the same proportions and assumptions, the estimated sales and income tax impact of the 94,300 jobs which can be directly (65,000 jobs) or indirectly (29,300 jobs) attributed to service exports outside Johnson County's local market would be approximately $129,200,000. The sales and income tax impact of the 50,800 jobs which are estimated to be either directly (35,000 jobs) or indirectly (15,800) related to Johnson County service exports outside the state would be approximately $69,600,000.

A major influence on the tax revenue impact from sales tax collections from a county like Johnson County is the state and local sales tax rate (Mikesell, 1970). Increases in the state and local sales tax rate have been found to reduce the level of retail activity and employment on the side of a state border on which the increases were made. Consumers appear to be more sensitive to the easily observable general sales tax than other taxes that

may indirectly raise business costs (Fox, 1986). Thus, the amount of tax revenue from the wages of export-oriented service workers and the amount of export activity of service firms to consumers and businesses on the other side of the state border appears to be most influenced by the sales tax rates. The only tax which appears to affect cross-border sales is the sales tax. Currently the total sales and use tax in Overland Park is 5.5 percent, and in Kansas City, Missouri it is 6.5 percent. Therefore, the existing Kansas and Missouri sales tax structures are relatively more favorable to retail trade in Johnson County than in Jackson County.

VIII. TAX SIMULATIONS

A. The Tax Situation

The total tax burden which a firm faces is made up of various taxes. The major taxes are corporate income, property, sales, compensating use, franchise and unemployment insurance taxes, and workman's compensation payments. Kansas and Missouri have different tax rates, allow different deductions, and have different incentives for economic development. Therefore, it is not possible to discuss the overall differences in the rate of taxes paid without some structure for analyzing the tax environments. This is carried out by considering the amount of taxes a hypothetical firm would pay in Kansas and Missouri. Because the relative taxes vary depending on the type of firm, three different hypothetical firms have been chosen. In the remainder of this section, there is a brief description of the major business taxes in Kansas and Missouri. The following section discusses the results of tax simulations based on hypothetical firm profiles. The methodology used in these tax simulations is based on that developed by Oslund (1987).

The corporate income tax rate for Kansas is 4.5 percent plus a 2.25 percent surtax on taxable income over $25,000. Missouri imposes a flat 5 percent corporate income tax. For both Kansas and Missouri, taxable income for a multi-state firm is determined by the level of activity in the state. Kansas currently uses a three-factor formula with each factor having an equal weight. The three factors are the amount of sales in the state as a percentage of total sales, the value of property in state as a percentage of total property, and the payroll expenditure in state as a percentage of

total payroll expenditure. The three-factor formula for Kansas can be expressed as:

$$1/3 \times \left(\frac{\text{Kansas Sales}}{\text{Total Sales}} + \frac{\text{Kansas Property}}{\text{Total Property}} + \frac{\text{Kansas Payroll}}{\text{Total Payroll}} \right) = \text{Apportionment Ratio}$$

Net income for the firm is multiplied by the apportionment ratio to determine Kansas taxable income.

In Missouri, firms may choose one of two apportionment ratios. Firms may use the three-factor formula based on sales, property and payroll, or firms may use a one-factor formula based on sales. The three factor formula is the same as that used by Kansas. If the one-factor formula is used, the apportionment ratio is the sales in Missouri as a percentage of total sales. Missouri allows federal income tax payments to be deducted before computing taxable income. Kansas does not allow this deduction. In Kansas City, Missouri an earnings tax of 1 percent of the net income attributable to Kansas City, Missouri is imposed. To determine the amount of net income attributable to Kansas City, Missouri, the three-factor formula is used for sales, property and payroll in the city.

Both Kansas and Missouri have a sales tax or compensating use tax. This is a tax which is paid on purchases that are used in the state. In Kansas, the rate is 3 percent. In Missouri, the rate is 4.225 percent and after July 1, 1990 will be 4.125 percent. Cities and counties in Kansas and Missouri have the option of imposing a sales tax. In Kansas this tax can be either 0.5 percent or 1 percent depending on the choice of the city or county. In Missouri, the additional sales tax may not exceed 3 percent, except for St. Louis County which may levy up to 3.375% sales tax in addition to the state sales tax. The total state, county and city sales and

compensating use tax in Overland Park is 5.5 percent and in Kansas City, Missouri it is 6.5 percent.

Both Kansas and Missouri have a business property tax. Kansas and Missouri both assess property tax on business land, buildings, machinery and equipment. Goods in transit are exempt. Missouri does not tax inventories and, beginning January 1, 1989, Kansas will no longer tax inventories; currently Kansas does tax inventories. Firms may be exempt from a percentage of this tax; the percentage of exemption is equal to the amount of interstate trade as a percentage of total trade. Since the firms considered in these tax simulations were either service firms or headquarters, no inventories were included.

The property tax depends on the mill levy, the assessment ratio and how the property is assessed. The mill levy is the dollar tax per $1,000 in assessed value. The assessment ratio is the ratio of assessed value to the market value of the property. The mill levy is composed of mill levies for various applications such as schools, fire protection and flood control. The mill levy may vary a great deal, even within one county, making it very difficult to compare tax rates. The mill rate varies between a low of 111.14 and a high of 232.23 in Johnson County, with an average mill rate of 146.80. The average mill rate will be used in the tax simulations. In Jackson County, the mill rate varies between 47.12 and 70.49 per thousand, with a mill rate of 52.64 in the Kansas City, Missouri school district. The Kansas City, Missouri mill rate includes the effect of the increase in taxes due to the U.S. District Judge Russell G. Clark's decision regarding desegregation in Kansas City, Missouri schools. The mill rate of 52.64 for

the Kansas City, Missouri school district will be used for the tax simulations for the Jackson County locations of the hypothetical firms.

These mill rates are somewhat difficult to compare since the valuation of the property also varies. In Kansas, property is valued as it would have been in 1968. In Missouri, property is currently assessed as in 1985. The property will be reassessed in 1989. As a result of reassessment, in Missouri, the increase in property tax must be "reasonable."

In Kansas, the statutory assessment ratio is 30 percent. On January 1, 1989, the statutory assessment ratio will be 30 percent for commercial-industrial property and 20 percent for commercial-industrial machinery. In Missouri, the statutory assessment ratio is 33 1/3 percent for commercial personal property and 32 percent for commercial real estate. In the tax simulation, Kansas taxes are simulated for both the pre- and post-assessment situations.

Corporate franchise tax in Kansas and Missouri are based on a firm's capital value. Kansas imposes a tax of 1/10th of one percent, with a $20 minimum and a $2,500 maximum on shareholders equity attributable to Kansas. Missouri imposes a franchise tax of 5/100ths of a percent with a $25 minimum. For a multi-state firm, in Kansas the apportionment of franchise tax is based on the three-factor formula. In Missouri, the apportionment of the franchise tax is based on the percentage of total assets which are in Missouri.

Unemployment insurance rates are firm specific and vary with the balance in the states' funds. In Kansas, the entry rate for clerical and office workers is 3.48 percent. In Missouri, the entry rate for the same classification is 2.7 percent. After three years of operations, the

unemployment insurance rates are adjusted based on the firm's history of hiring, dismissing and layoffs. In Kansas, the average rate of unemployment insurance is 2.48 percent. The rates based on SIC codes are not available. In Missouri, the average rate of unemployment insurance for a firm in business services is 1.47 percent of payroll.

Although workman's compensation cannot be considered a tax, a brief discussion is included since the rates between states can vary and firms are obligated to provide coverage for workers. For Kansas and Missouri, the rates are very similar. For clerical workers, the rate of workman's compensation is .24 percent of earnings in Kansas, and in Missouri, the rate of workman's compensation is .25 percent of earnings.

B. Tax Simulation Methodology and Assumptions

This portion of the report considers the level of taxes paid by three hypothetical firms. The level of taxes varies according to whether the firms are located in Johnson County, Kansas or Jackson County, Missouri. The purpose of this section is to provide an easy comparison of the financial effect on a corporation from locating in either Johnson County, Kansas or Jackson County, Missouri due to differences in taxes. Differences in profitability from locating in these areas may result from a wide variety of factors. The focus of this study is to compare the change in the tax burden which the firm must pay. Because the level of taxes a firm must pay is made up of various taxes, based on different variables, and not independent, it is difficult to compare differences in the tax burden without some structure. The hypothetical firm provides this structure.

Three types of hypothetical firms have been created and considered to operate in Johnson County, Kansas and in Jackson County, Missouri. The amount of taxes the hypothetical firm would pay in Johnson County is compared to the amount of taxes the firm would pay in Jackson County.

The three hypothetical firms are based on national data and are created to represent a broad range of firms. Three hypothetical firms are considered since diversity between these firms will result in the firms paying various percentages of their income in taxes. The resulting amount of taxes each of the three hypothetical firms pays in Kansas relative to Missouri can be considered a measure of how competitive Johnson County is, relative to Jackson County with regard to taxes, for firms which fall into these three categories. Two of the three hypothetical firms are service firms. These are based on three digit SIC codes. The third firm is the headquarters of a manufacturing firm and it is based on a two digit SIC code.

The approach of this study is to consider types of firms which currently exist in the area and which can move across the state line with relative ease. Firms which can move more easily will be more easily influenced by such differences as changes in tax laws may cause. Many service firms can move quite easily, however, many manufacturing firms may not fit this criteria. The production facilities of a manufacturing firm may require a great deal more expense to move. In order to consider a wide variety of firms and still consider types of firms which can move with relative ease, only the headquarters or administrative portion of the manufacturing firm is assumed to move, whereas for the two hypothetical service firms, the entire firm is assumed to be easily moved.

The SIC codes which the firms are based on are chosen based on four criteria. First, they must represent industries currently operating in either Johnson County, Kansas or Jackson County, Missouri. Second, the firms must be export-oriented. The hypothetical firms must represent firms which provide services outside the region so that if the service firm moved into the region, it would increase the level of employment in the region rather than displace a service firm currently operating there. Since only the headquarters of a manufacturing firm is considered, this provides a service to the company and therefore if a headquarters moved into the region it would not displace workers already there. Third, there must be sufficient data so the simulation is feasible. This rules out considering firms such as a hypothetical insurance firm even though they are an important part of the Johnson County economy. And fourth, the firm must be in a sector which shows potential for future growth and is well-suited for location in the Kansas City area.

The two hypothetical service firms chosen are a telecommunications firm (SIC 481) and a data processing firm (SIC 737). The hypothetical manufacturing firm for which a profile has been developed is in nonelectrical machinery manufacturing (SIC 35). According to the Midwest Research Institute's Kansas Economic Development Study Target Industry Analysis of 1986, all three of these industries are good target industries for the state of Kansas because of their growth potential and characteristics which make them well-suited for location in Kansas. The nonelectrical machinery category was chosen specifically as a target industry for Kansas' urban areas in the Midwest Research Institute's report.

The three hypothetical firms are based on data from the survey conducted for this study and from a variety of state and national data sources. The "same" firm is assumed to operate in either Jackson County or Johnson County. Since the focus of this project is to consider the effect of taxes on a corporation's decision as to where to locate rather than how variations in the tax structure result in changes in other location factors, the hypothetical firm is assumed to have the same sales and the same size regardless of where it is located. Costs to the firm, other than non-tax costs are assumed to be the same on each side of the stateline. That is, costs such as wage costs and land prices are assumed to be the same.

These are strong assumptions and some care must be taken when interpreting the results. These assumptions ignore an important feedback effect between property taxes and property values. A business site in a low property tax area will generally cost more than a similar business site in a high property tax area. The effect of property taxes on property values is referred to as the capitalization effect.

To better understand the capitalization effect, consider comparable sites in Kansas City, Missouri (denoted by M) and in Johnson County, Kansas (K). The yearly cost of using a site in Missouri is approximated by an interest rate times the property value plus the associated property taxes:

$$C_M = i * (\text{site value})_M + \text{property tax}_M.$$

Similarly, the yearly cost of a Kansas site is:

$$C_K = i * (\text{site value})_K + \text{property tax}_K.$$

Suppose that initially Kansas yearly property costs exceed those in Missouri. Over time, property users will start to move to Missouri. As demand for sites in Kansas decreases, property values in Kansas start to

fall relative to those in Missouri. When a market equilibrium is reached, comparable sites in the two states should have the same yearly costs. The two equations above imply that

$$i * (\text{site value})_K - i * (\text{site value})_M =$$

$$\text{property tax}_M - \text{property tax}_K.$$

In equilibrium, the property tax difference between the locations is balanced by differences in site values. Thus, the net profit calculations in the tax simulations tables are adjusted to correct for the capitalization effect. If Missouri property taxes are lower than those in Kansas, Kansas property values will be lower than in Missouri. The cost to the firm for the Kansas property will be less and profits will be higher because of this lower cost.

Property taxes will also be compared under both pre- and post-assessment conditions for Johnson County, Kansas. It is assumed in this simulation that total property tax collections for the county for property currently owned will remain the same. It is also assumed that personal property and public utilities are currently appraised near their market value. To calculate what the new appraised value of real estate will be after reassessment, state reports of ratios comparing sales value to assessed value were used. In this way market values were calculated for the different types of property and the new assessment ratios were applied to come up with the new assessed valuations for different types of property in the county. A new mill rate is then calculated which will keep tax collections constant for the county.

The effect of reassessment can be seen in the effective tax rates shown in Table 20. These rates are calculated by multiplying the mill rate by the

TABLE 20
EFFECTIVE TAX RATES

	KANSAS BEFORE REASSESSMENT	KANSAS AFTER REASSESSMENT	MISSOURI
COMMERCIAL REAL ESTATE	0.7%	1.8%	1.7%
BUSINESS PERSONAL PROPERTY	4.4%	1.2%	1.7%
PUBLIC UTILITIES	4.4%	1.8%	1.7%

Source: Tax Simulations for the study of "The Nature and Significance of the Overland Park\Johnson County Economy." Institute for Public Policy and Business Research, University of Kansas, 1988.

assessment ratio. With the new assessment ratios and with the mill rates estimated using the above methodology, the effective tax rate for Kansas commercial real estate increases from 0.7 percent before reassessment to 1.8 percent after reassessment and the effective tax rate for public utility property decreases from 4.4 percent to 1.8 percent. The effective tax rate for Kansas business personal property decreases from 4.4 percent to 1.2 percent.

As for other costs to the firm, it is assumed that the firm will pay the same wage regardless of whether the firm is operating in Kansas or Missouri. That is, it is assumed that variation in personal income tax will not result in variations in wage demands so that the employee's after tax wages remain unchanged. It is also assumed that the firm can draw on the same pool of workers whether it operates in Kansas or Missouri.

In addition, it is assumed that other non-tax costs of operation do not change, and it is assumed that the cost of materials and the cost of office machines do not vary. Considering the proximity of the two regions, these seem like reasonable assumptions for some items; however, costs do differ for some inputs such as gas, water and electricity. But, by making these assumptions, one can isolate the effect of the differences in tax requirements in the two areas which is the issue of relevance here.

C. Tax Simulation Results

The hypothetical data processing firm (SIC 737) is a firm with one location, in either Overland Park or Jackson County. Its total employment is 50 employees. It is an export-oriented service firm, selling a major portion of its product outside the local market. Table 21 presents a

TABLE 21
TAX SIMULATION RESULTS
DATA PROCESSING FIRM, SIC 737

	KANSAS BEFORE REASSESSMENT	KANSAS AFTER REASSESSMENT	MISSOURI
ASSETS			
LAND	$15,750	$15,750	$15,750
BUILDINGS	$157,500	$157,500	$157,500
EQUIPMENT	$367,500	$367,500	$367,500
TOTAL NUMBER OF EMPLOYEES (ALL IN KANSAS OR MISSOURI)	50	50	50
PAYROLL	$1,250,000	$1,250,000	$1,250,000
EMPLOYER'S BENEFITS PAYMENT	$93,750	$93,750	$93,750
SALES	$3,500,000	$3,500,000	$3,500,000
OTHER COSTS	$1,050,000	$1,050,000	$1,050,000
DEPRECIATION	$96,868	$96,868	$96,868
INTEREST PAYMENT	$23,946	$23,946	$23,946
TOTAL RENT PAYMENT	$140,000	$140,000	$140,000
FEDERAL TAXABLE INCOME	$699,833	$709,637	$722,101
TAXES			
FEDERAL INCOME TAX	$237,943	$241,277	$245,514
KS/MO STATE INCOME TAX	$38,246	$38,790	$11,072
KANSAS CITY MO. EARNINGS TAX			$3,355
KS/MO UNEMPLOYMENT INSURANCE & WORKMAN'S COMPENSATION	$34,000	$34,000	$21,500
KS/MO PROPERTY TAX	$17,333	$7,529	$6,448
KS/MO FRANCHISE TAX	$301	$301	$270
KS/MO SALES TAX ON EQUIPMENT PURCHASES	$4,594	$4,594	$5,742
TOTAL KS/MO TAXES	$89,881	$80,620	$42,646
TOTAL ALL TAXES	$332,418	$326,490	$293,902
NET PROFIT	$423,643	$429,571	$462,159
NET PROFIT AFTER CAPITALIZATION ADJUSTMENT	$434,529	$430,651	-
KANSAS TAXES AS A % OF MISSOURI TAX	210.8%	189.0%	
TOTAL TAXES FOR KANSAS LOCATION AS A % OF TOTAL TAXES FOR MISSOURI	113.1%	111.1%	
KANSAS NET PROFIT AS A % OF MISSOURI NET PROFIT (AFTER CAPITALIZATION)	94.0%	93.2%	

Source: Tax Simulations for the study of "The Nature and Significance of the Overland Park\Johnson County Economy." Institute for Public Policy and Business Research, University of Kansas, 1988.

profile of this firm. Because of the nature of the data processing industry, a large portion of its cost is the labor cost. Therefore, the workman's compensation and unemployment insurance rates are particularly significant when considering the differences in the tax burden when this firm is located in either Overland Park or Jackson County. These rates are generally firm specific since they depend on a firm's history. Thus, rates used in the simulation are rates for a new firm. The rates an individual firm may actually pay can vary a great deal among firms and could easily change the results depending on the individual history of the firm.

The hypothetical telecommunications firm (SIC 481) is a major location of a multi-location firm which is an export-oriented service firm providing services to customers in a multi-state region. Occupations of the work force at this location are primarily administrative and clerical. It is a firm with 314 employees at this location and 3000 in the entire firm. Table 22 provides a profile of this firm and its tax payments based on the profile.

For the hypothetical non-electrical machinery manufacturing firm (SIC 35), only the headquarters or administrative portion of the firm is considered. The headquarters of the firm has 100 employees and total employment for the firm is 2,000 employees. (See Table 23 for this firm's profile.) This hypothetical firm is located on at least two sites - the manufacturing portions of the firm are located in a state other than Kansas or Missouri and the headquarters and administrative portions of the firm are located in either Overland Park or Jackson County. The tax burden from locating the headquarters portion of the firm in either of these two locations is then compared.

TABLE 22
TAX SIMULATION RESULTS
TELECOMMUNICATIONS REGIONAL HEADQUARTERS, SIC 481

	KANSAS BEFORE REASSESSMENT	KANSAS AFTER REASSESSMENT	MISSOURI
ASSETS (TOTAL COMPANY)			
LAND	$5,773,621	$5,773,621	$5,773,621
BUILDINGS	$85,347,178	$85,347,178	$85,347,178
EQUIPMENT	$1,418,941,027	$1,418,941,027	$1,418,941,027
ASSETS (THIS LOCATION)			
LAND	$604,088	$604,088	$604,088
BUILDINGS	$8,929,794	$8,929,794	$8,929,794
EQUIPMENT	$12,083,069	$12,083,069	$12,083,069
NUMBER OF EMPLOYEES	5000	5000	5000
IN KANSAS OR MISSOURI	523	523	523
PAYROLL	$154,085,289	$154,085,289	$154,085,289
EMPLOYER'S BENEFITS PAYMENT	$9,275,934	$9,275,934	$9,275,934
SALES	$556,353,836	$556,353,836	$556,353,836
COST OF MATERIALS	$142,476,080	$142,476,080	$142,476,080
DEPRECIATION	$67,418,676	$67,418,676	$67,418,676
INTEREST PAYMENT	$63,211,890	$63,211,890	$63,211,890
TOTAL RENT PAYMENT	$19,634,494	$19,634,494	$19,634,494
FEDERAL TAXABLE INCOME	$69,662,815	$70,225,721	$70,420,430
TAXES			
FEDERAL INCOME TAX	$23,685,357	$23,876,745	$23,942,946
OTHER STATES' TAXES	$20,910,764	$20,934,260	$20,942,388
KS/MO STATE INCOME TAX	$776,088	$782,364	$460,198
KANSAS CITY MO. EARNINGS TAX			$35,928
KS/MO UNEMPLOYMENT INSURANCE & WORKMAN'S COMPENSATION	$465,920	$465,920	$277,295
KS/MO PROPERTY TAX	$952,011	$389,105	$364,133
KS/MO FRANCHISE TAX	$2,500	$2,500	$6,284
KS/MO SALES TAX ON EQUIPMENT PURCHASES	$60,415	$60,415	$75,519
TOTAL KS/MO TAXES	$2,256,934	$1,700,304	$1,219,357
TOTAL ALL TAXES	$46,853,055	$46,511,310	$46,104,691
NET PROFIT	$42,293,526	$42,635,271	$43,041,890
NET PROFIT AFTER CAPITALIZATION ADJUSTMENT	$42,881,403	$42,660,243	-
KANSAS TAXES AS A % OF MISSOURI TAX	185.1%	139.4%	
TOTAL TAXES FOR KANSAS LOCATION AS A % OF TOTAL TAXES FOR MISSOURI	101.6%	100.9%	
KANSAS NET PROFIT AS A % OF MISSOURI NET PROFIT (AFTER CAPITALIZATION)	99.6%	99.1%	

Source: Tax Simulations for the study of "The Nature and Significance of the Overland Park\Johnson County Economy." Institute for Public Policy and Business Research, University of Kansas, 1988.

TABLE 23
TAX SIMULATION RESULTS
NONELECTRICAL MACHINERY MANUFACTURING HEADQUARTERS, SIC 35

	KANSAS BEFORE REASSESSMENT	KANSAS AFTER REASSESSMENT	MISSOURI
ASSETS (MANUFACTURING LOCATION)			
BUILDINGS	$20,653,232	$20,653,232	$20,653,232
MACHINERY	$36,247,062	$36,247,062	$36,247,062
ASSETS (HEADQUARTERS LOCATION)			
BUILDINGS	$2,008,940	$2,008,940	$2,008,940
EQUIPMENT	$1,684,526	$1,684,526	$1,684,526
NUMBER OF EMPLOYEES	2000	2000	2000
IN KANSAS OR MISSOURI	100	100	100
PAYROLL	$48,744,450	$48,744,450	$48,744,450
EMPLOYER'S BENEFITS PAYMENT	$6,106,800	$6,106,800	$6,106,800
SALES	$207,952,964	$207,952,964	$207,952,964
COST OF MATERIALS	$127,683,120	$127,683,120	$127,683,120
DEPRECIATION	$5,129,634	$5,129,634	$5,129,634
INTEREST PAYMENT	$2,009,545	$2,009,545	$2,009,545
TOTAL RENT PAYMENT	$1,600,000	$1,600,000	$1,600,000
FEDERAL TAXABLE INCOME	$7,918,990	$7,951,241	$7,974,406
TAXES			
FEDERAL INCOME TAX	$2,692,457	$2,703,422	$2,711,298
OTHER STATES' TAXES	$4,240,705	$4,242,828	$4,243,895
KS/MO STATE INCOME TAX	$31,242	$31,371	$13,158
KANSAS CITY MO. EARNINGS TAX			$2,648
KS/MO UNEMPLOYMENT INSURANCE & WORKMAN'S COMPENSATION	$89,553	$89,553	$56,629
KS/MO PROPERTY TAX	$88,626	$56,375	$63,590
KS/MO FRANCHISE TAX	$2,190	$2,190	$1,122
KS/MO SALES TAX ON EQUIPMENT PURCHASES	$14,748	$14,748	$18,361
TOTAL KS/MO TAXES	$226,358	$194,237	$155,508
TOTAL ALL TAXES	$7,159,519	$7,140,487	$7,110,701
NET PROFIT AFTER TAXES	$4,673,945	$4,692,977	$4,722,764
NET PROFIT AFTER CAPITALIZATION ADJUSTMENT	$4,698,980	$4,685,762	-
KANSAS TAXES AS A % OF MISSOURI TAXE	145.6%	124.9%	
TOTAL TAXES FOR KANSAS LOCATION AS A % OF TOTAL TAXES FOR MISSOURI	100.7%	100.4%	
KANSAS NET PROFIT AS A % OF MISSOURI NET PROFIT (AFTER CAPITALIZATION)	99.5%	99.2%	

Source: Tax Simulations for the study of "The Nature and Significance of the Overland Park\Johnson County Economy." Institute for Public Policy and Business Research, University of Kansas, 1988.

Of the three hypothetical firms analyzed, only the results for the data processing firm were significant for the effect on the total firm. For this firm, Kansas taxes were 110.8% higher before reassessment and 89.0% higher after reassessment than the Missouri taxes. However, the difference is reduced, though still significant when total taxes to the state and federal government are considered. Total taxes in Kansas before reassessment were 13.1% higher than those in Missouri and taxes in Kansas after reassessment were 11.1% higher than those in Missouri. Net profit, after capitalization of property taxes, was 6.0% lower in Kansas before reassessment and 6.8% lower in Kansas after reassessment than in Missouri.

For the telecommunications regional headquarters, the tax difference was again significant for the Kansas and Missouri taxes. If the firm were located in Kansas it would pay 85.1% more in Kansas before reassessment and 39.4% in Kansas after reassessment than in Missouri if it were located in Missouri. Once again the difference is greatly reduced when taxes to other states and the federal government are taken into account. All taxes to all levels of government were 1.6% higher before reassessment and 0.9% higher after reassessment for the Kansas location than for the Missouri location. Net profit, after a capitalization adjustment for property tax, was 0.4% lower in Kansas before reassessment and 0.9% lower in Kansas after reassessment than in Missouri.

For the nonelectrical machinery manufacturing headquarters, taxes paid to Kansas before reassessment were 45.6% higher and after reassessment were 24.9% higher than taxes paid to Missouri. The difference in all taxes, including taxes paid to Kansas or Missouri, other states and the federal government, was negligible - total taxes for the firm located in Kansas were

0.7% higher before reassessment and 0.4% higher after reassessment than for the firm located in Missouri. Net profit, after a capitalization adjustment for property tax, was 0.5% lower in Kansas before reassessment and 0.8% lower in Kansas after reassessment than in Missouri.

Of the taxes, state income tax, property tax, unemployment insurance and workman's compensation were all higher in Kansas than in Missouri for each of the three firms both before and after reassessment. The estimated effects of reassessment raised property tax on commercial real estate about 250 percent and lowered the effective property tax on business personal property by about 73 percent. The net effect on the three hypothetical firms was lower total Kansas property taxes after reassessment because of the relative amounts of the two types of property which each firm owned. Although the total Kansas property tax bills were more in line with Missouri property taxes after Kansas reassessment, they were still somewhat higher than in Missouri. The sales tax on equipment purchases for all three firms were significantly higher in Missouri than in Kansas, as were tax payments to other states and the federal government for the two national firms-nonelectrical machinery and telecommunications.

Thus, the tax simulations show that there is a significant difference in the total taxes paid to either Kansas or Missouri, depending on which location each of the three firms might choose, but the significance is greatly reduced when total taxes to all states and the federal government are compared. The net difference to the entire firm of locating in either Johnson County, Kansas or Jackson County, Missouri is relatively negligible for the two firms which have locations in other states - the nonelectrical machinery and telecommunications firms. The difference is still somewhat

significant for the data processing firm, which only has one location in either Johnson County or Jackson County.

X. SUMMARY

One can conclude, based on the results of this study that the regional service and headquarters firms located in Johnson County have a very significant economic impact on the county and state economies. Approximately 92,000 workers in Johnson County are directly employed by export-oriented service and headquarters firms, approximately 65,000 jobs are directly related to Johnson County service exports outside the local market and about 35,000 jobs are directly related to Johnson County service exports outside the state market.

Based on the estimate of 92,000 workers directly employed by export-oriented services and headquarters located in Johnson County, 133,500 jobs, or about eleven percent of the employment in the state, are related, directly or indirectly, to the export-oriented service and headquarters firms in Johnson County. Over eleven percent of income and sales tax revenues can be attributed to the existence of these firms in Overland Park. Given the pace of change, these proportions are expected to increase.

The results of this study indicate that, for every 100 additional employees in a regional service or headquarters firm located in Johnson County, about an additional 45 jobs will be created in the state of Kansas, including 36 that will be created in Johnson County. The total expenditures in the state per each additional 100 workers would be expected to be at least $3,900,000, including $3,000,000 in the county. The total earnings created per each 100 workers would be $2,300,000 in the state, including $2,100,000 in the county.

The estimated sales due to the total impact of the 92,000 workers would be $3.5 billion in the state and $2.8 billion in the county. Estimated earnings for the total impact would be $2.2 billion in the state and $2.0 billion in the county.

The estimated total sales impact due to only the 65,000 jobs which are estimated to be directly related to Johnson County service exports outside the local market would be $2.5 billion for the entire state and $2.0 billion for the county. The total earnings impact would be $1.5 billion in the state with $1.4 billion of that in the county. Total employment due to the 65,000 jobs would be 94,300, with 23,400 additional jobs in the county and 5,900 additional jobs elsewhere in the state.

The estimated total sales impact due to the 35,000 jobs which are estimated to be directly related to Johnson County service exports outside the state market would be $1.3 billion for the entire state and $1.1 billion for the county. The total earnings impact would be $800 million in the state with $740 million of that in the county. Total employment due to the 35,000 jobs would be 50,800, with 12,600 additional jobs in the county and 3,200 additional jobs elsewhere in the state.

Thus, there is a significant portion of the services sector of the Johnson County economy which can be considered in the same regard as "primary" industries, such as manufacturing. Just as a manufacturing firm can draw wealth into a state by exporting its product, create new employment in the state, and support growth in other sectors of the economy, so too can certain types of service firms. Not all services exist merely to support other local industries or the consumption of the local workforce. Export-oriented services such as business services and headquarters establishments

do export their "product" outside the community and state, draw in wealth and create additional jobs. They also provide high-paying jobs for highly skilled and educated workers. A service economy is not necessarily a low-wage economy, dependent on imports.

Essentially, there are two types of services which exist - export-oriented services, which are primary industries and part of a community's economic base, and services, such as personal services, which are not primary, are not part of the base, and are dependent on the existence of the primary industries in the economy. Within Johnson County, approximately three-fourths of the work force is made up of service employees. Of these, 64 percent, or 92,000 workers, are in export-oriented service firms, and about one third are in supporting service firms. As of April 1988, at least 48 percent of total Johnson County employment is in export-oriented services The 65,000 Johnson County jobs related to service exports outside the local market represent 34 percent of total Johnson County employment and the 35,000 Johnson County jobs related to service exports outside the state market represent 18 percent of total Johnson County employment. With the addition of indirect workers, Johnson County service exports outside the local market account for about 88,400 jobs or 46 percent of total county employment, and Johnson County service exports outside the state market account for about 47,600 or 25 percent of total county employment.

For the entire state, the 133,500 jobs which are related directly or indirectly to the export-oriented service and headquarters firms located in Johnson County are 11 percent of total state employment. The 93,400 jobs in the state related directly or indirectly to the Johnson County services exported outside the local market and the 50,800 jobs in the state related

directly or indirectly to Johnson County services exported outside the state represent 7.5 and 4 percent of total state employment, respectively.

Therefore, it can be concluded that the export-oriented service sector of Johnson County is of great significance to the county and state economies. The economic well-being of the county, and to a lesser extent, of the state are affected by the economic well-being of this sector. The significance of this sector should be recognized and public policy should take knowledge of this significance into account.

APPENDICES

APPENDIX A
QUESTIONNAIRE

Institute for Public Policy and Business Research
Overland Park Study
Survey Instrument

I. IDENTIFICATION

Name of firm _____ Date _____

Address _____

Mailing address _____

Company Representative's name & title _____

Phone number _____ Interviewer _____

II. NATURE OF FIRM

Name of unit(s)/division(s) at this location _____

_____

_____

Type of establishment at this location (check those which apply):

national headquarters_____ regional division_____ district office _____

sales/distribution for your firm_____ other auxiliary (e.g., R&D, service, repair)_____ line operations/production_____

Number of other locations of the firm? Total_____Other Overland Park_____

Total Johnson County_____Total Kansas_____Total Kansas City, MO metro_____

What do you produce or provide?

This location_____

Elsewhere_____

What is the major SIC code of this location?_____ What other SIC codes apply to this location_____

What other SIC codes apply to your company_____

_____

III. EMPLOYMENT

	Total Company	This Location	All of Overland Park	Total Johnson County	Total Kansas	Total Kansas City, MO area
Number of employees	_____	_____	_____	_____	_____	_____

Percentage of labor force at this location devoted to:

headquarters, administrative, & staff activities _____

line/production activities _____

other _____

IV. ANNUAL SALES, BY LOCATION OF CUSTOMERS (for most recent fiscal year)

			Estimated Percentages by Location (Total Sales this Location = 100%)			
	Total for the company (in $000)	Total for this location (in $000)	% Sales to Overland Park	% Sales to Rest of Johnson County	% Sales to Rest of Kansas	% Sales to Kansas City, MO Area
Dollar value of sales, billings, or receipts	_____	_____	_____	_____	_____	_____

V. PAYROLL, BY EMPLOYEES' RESIDENCE

			Estimated Percentages by Location (Total Payroll this Location = 100%)			
	Total for the company (in $000)	Total for this location (in $000)	% Payroll to Overland Park	% Payroll to Rest of Johnson County	% Payroll to Rest of Kansas	% Payroll to Kansas City, MO Area
Payroll	_____	_____	_____	_____	_____	_____

VI. VALUE OF CAPITAL OF ENTIRE FIRM, BY LOCATION

	Total for the company (in $000)	Total for this location in ($000)	Estimated Percentages by Location (Capital at this Location = 100%) % In Overland Park	% In Rest of Johnson County	% In Rest of Kansas	% In Kansas City, MO MO Area
(Estimate the following by location of use):						
Total personal property	_____	_____				
Office machines & computers		_____	_____	_____	_____	_____
Office furniture		_____	_____	_____	_____	_____
Commercial & industrial machinery & equipment		_____	_____	_____	_____	_____
Automobiles & other vehicles		_____	_____	_____	_____	_____
Other personal property		_____	_____	_____	_____	_____
(Estimate the following by location of real estate):						
Land	_____	_____	_____	_____	_____	_____
Buildings	_____	_____	_____	_____	_____	_____

VII. SUPPORTING DETAIL

	Total in Overland Park	Rest of Johnson County	Rest of Kansas	Kansas City, MO Area
(Estimate the following by location of real estate):				
Square feet of office space rented	_____	_____	_____	_____

Square feet of office space owned	_____	_____	_____	_____
Square feet of industrial property rented	_____	_____	_____	_____
Square feet of industrial property owned	_____	_____	_____	_____
Acres of land rented	_____	_____	_____	_____
Acres of land owned	_____	_____	_____	_____

XIII. CURRENT ANNUAL CAPITAL EXPENDITURES FOR THIS ESTABLISHMENT, BY LOCATION

		Estimated Percentages by Location			
	Total for this location ($000)	% To Overland Park	% To Rest of Johnson County	% To Rest of Kansas	% To Kansas City, MO Area
(Estimate the following by location of vendor):					
Office machines & computers	_____	_____	_____	_____	_____
Office furniture	_____	_____	_____	_____	_____
Commercial & industrial machinery & equipment	_____	_____	_____	_____	_____
Automobiles & other vehicles	_____	_____	_____	_____	_____
Other personal property	_____	_____	_____	_____	_____
(Estimate the following by location of real estate):					
Purchases of land & buildings	_____	_____	_____	_____	_____
New construction & improvements	_____	_____	_____	_____	_____

IX. CURRENT ANNUAL OPERATING EXPENDITURES FOR THIS ESTABLISHMENT, BY LOCATION

		Estimated Percentages by Location			
	Total for this location ($000)	% To Overland Park	% To Rest of Johnson County	% To Rest of Kansas	% To Kansas City, MO Area
Rent (by property owner's location)	_____	_____	_____	_____	_____
Interest payments made (by location of financial institution)	_____	_____	_____	_____	_____
(Estimate the following by location of service-provider):					
Temporary employees	_____	_____	_____	_____	_____
Professional services (legal, accounting, consulting)	_____	_____	_____	_____	_____
Janitorial services	_____	_____	_____	_____	_____
Computing services	_____	_____	_____	_____	_____
Advertising services	_____	_____	_____	_____	_____
U.S. Mail	_____	_____	_____	_____	_____
Other Mail & Shipping	_____	_____	_____	_____	_____
Air Travel & Rental Cars	_____	_____	_____	_____	_____
Restaurants	_____	_____	_____	_____	_____
Insurance (employee benefits)	_____	_____	_____	_____	_____
Insurance (company liability)	_____	_____	_____	_____	_____
Other services	_____	_____	_____	_____	_____

	Total for this location ($000)	Estimated Percentages by Location: % To Overland Park	% To Rest of Johnson County	% To Rest of Kansas	% To Kansas City, MO Area
(Estimate the following by location of utility-provider):					
Telephone/other carrier					
Gas/Electricity/Water					
Other Utilities					
(Estimate the following by location of vendor):					
Office Supplies, Materials & Parts					
Motor fuel					
Other goods (list)					
Other operating expenses (list)					

	Total for this location paid in Kansas ($000)	Estimated Percentages by Location: % To Overland Park	% To Rest of Johnson County	% To Rest of Kansas	% To Kansas City, MO Area
(Estimate the following by location of taxing authority):					
Sales & compensating use tax for equipment					
Corporate income tax					

		Estimated Percentages by Location			
	Total for this location ($000)	% To Overland Park	% To Rest of Johnson County	% To Rest of Kansas	% To Kansas City, MO Area
Personal income tax withholding					
Property tax paid (except rental property)					
Motor fuel tax					
Franchise tax					
Workman's compensation					
Unemployment insurance					
Other taxes (list)					

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APPENDIX B
METHODOLOGY OF THE INPUT-OUTPUT MODEL

The purpose of this study is to determine the impact of headquarters and service establishments on the Overland Park and Johnson County economies. One way of measuring the impact of an an industry is through the demand it creates for goods and services within the economy.

Headquarters establishments stimulate the economy directly through their purchases of goods and services, and through the consumption of their employees. This first round of spending produces income for a second group of firms within the economy, enabling them to make purchases and pay employees. The second round firms in turn produce income for a third round of firms. The direct impact of the headquarters establihments are magnified by what is known as a multiplier effect.

A Simplified Multiplier Model.

A simple multiplier model relies on a basic supply-demand equality. Algebraically,

(1) $X = D_T$

where X is an nx1 vector of Johnson County outputs by sector, and D_T is an nx1 vector of total demands for Johnson County produced products.

A key to the multiplier model is that demand for Johnson County products in part depends on the level of output in the county. The level of output helps to determine income and hence consumption. Furthermore, the level of output determines the demand of firms for materials and components, often referred to as intermediate goods. Finally, the level of output will

help to determine the firms' demand for new investment goods. The dependence of demand on output can be expressed in a simple algebraic way:

(2) $D_T = \phi X + F$

where ϕ is an nxn matrix of constants and F is exogenous demand--the portion of demand which is independent of output. Once demand has been written in the form specified in equation (2), equation (1) can be solved for output:

(3) $X = (I - \phi)^{-1} F$

where I is the nxn identity matrix. The matrix $(I - \phi)^{-1}$ is known as the multiplier matrix. The multiplier matrix can be used to summarize the impact of a change in exogenous demand on Johnson County output by sector:

(4) $\Delta X = (\text{multiplier})\ \Delta F$ (Δ indicates change).

Several components of demand contribute to the multiplier matrix, as detailed below.

Components of Demand.

Demand for Johnson County products can be broken down into a local and an export component. Local demand for Johnson County products consists of total demand originating from Johnson County firms and consumers, minus the amount of goods these customers import from outside the county. Export demand refers to purchases from any customers outside Johnson County, including state and federal government agencies. Algebraically,

(3) $D_T = (D_J - M) + E$

D_J : demand from Johnson County firms and consumers (nx1)

M : imports (nx1)

E : exports (nx1).

Several different types of demand can be identified within total Johnson County demand: consumer demand (C), intermediate demand (Int), investment demand (J), inventory demand (V), state government demand (S), local government demand (L) and federal government demand (G). It is likely that all of the sources of demand except state and federal government depend on Johnson County production. However, this study makes the simplifying assumption that only consumer and intermediate demand depend on county output. Other components of demand are exogenous, that is, independent of current output. Since the model ignores links between investment and output, it is classified as static.

Detailed Demand Equations.

Intermediate Products Demand

Intermediate demand linkages between industries are described by an nxn matrix of technical coefficients **A**. A typical element of **A**, a_{ij}, indicates the dollar amount of good i which is typically used as an input to produce one dollar's worth of output of good j. The **A** matrix allows estimates of intermediate demand by commodity:

(4) $\mathbf{Int} = \mathbf{A}\,\mathbf{X}$.

The source data set for calculation of the **A** matrix is the BEA 1981 update of the U.S. 85 industry/commodity Input-Output model, available in the Survey of Current Business, January, 1987, pp. 42 - 58. Ideally, we would like to implement the Johnson County model based on the 85 industry scheme. However, this detail of modeling requires state and county level data such as payroll and employment at four digit S.I.C. detail. Unfortunately, a significant amount of detailed information on employment,

payroll, and other important variables is suppressed at the state level for reasons of confidentiality. An even greater amount is suppressed at the county level. To minimize data suppression problems, we grouped BEA I/O sectors, which eventually reduced the number of sectors in the Johnson County model to 45. The make and use matrixes were initially aggregated according to these definitions.

The national technical coefficients matrix was then inferred according to the formula

1. $A = (\text{use matrix}) * (\text{make matrix})^{-1}$.

The Johnson County A matrix was assumed to be identical to the national matrix. The scarcity of four digit detailed employment information prevented weighting the national matrix to produce a region specific result.

Consumption Demand

A basic assumption used in the Johnson County model is that consumption depends on personal income after taxes. National data allows the calculation of a vector a ratios between consumption by type of commodity and personal disposable income. The Johnson County model assumes that consumers follow the national pattern. A more difficult task in construction of the model is relating Johnson County personal disposable income to output.

Conceptually, personal income can be broken into two components, depending on whether the income is dependent on current production. Unfortunately, few data sources exist to implement the breakdown for a regional economy. For the Johnson County model, we assume that wage and salary earnings vary directly with output: we include all payments to labor in the "dependent" category. The relationship of Johnson County property

type income to Johnson County output is less clear. If the owners of real estate and capital live outside Johnson County, the income they receive from their assets leaks out of the local economy, and any second round stimulation of the economy is short circuited. Since detailed information on the ownership of capital was not available for the Johnson County study, we were forced to make some generalizations. For agricultural sectors, we assumed that all property type income was distributed to local owners. For manufacturing and service sectors, we assumed that only labor-type income stayed within the local economy, and that rents and profits were paid to out-of-area owners.

Formally, the relationship between consumption and personal disposable income is summarized by the equation:

(5) $$C = (1-t)\,\ddot{O}\,\ddot{y}'X + c^{*}.$$

In the above expression, $\ddot{y}$ is a vector of coefficients representing the fraction of income from production of each type of good that flows back into the community, $\ddot{O}$ is the vector of consumption coefficients, t is the average income tax rate, and c^{*} is the amount of consumption that is independent of current income.

Consumption of each type of good as a percentage of total consumption was calculated from the personal consumption column of the 1981 U.S. Input-Output update. It is assumed that these coefficients are the same across location (U.S., Kansas, or Johnson County), and across time (1981 or 1985). Total consumption as a percentage of personal disposable income was calculated from personal income detail in the Survey of Current Business.

The consumption coefficients do not necessarily sum to one. Implicitly, there is an additional category for goods such as noncompetitive imports which have not been included in the current models.

Import Coefficients

Imports of each commodity are assumed to be a fixed percentage of demand for that commodity.

(6) $\mathbf{M} = \hat{\mathbf{m}}\ (D_j)$

But from equations 1 and 3,

(7) $D_j = \mathbf{X} - \mathbf{E} + \mathbf{M}.$

In reduced form, we can define an import coefficient,

$\hat{\mu} = \hat{\mathbf{m}}/(1-\hat{\mathbf{m}})$, such that

(8) $\mathbf{M} = \hat{\mu}\ (\mathbf{X} - \mathbf{E}).$

Import coefficients were calculated using a modification of the location quotients method, correcting for foreign trade and differences between regions in intermediate product use. The coefficients were calculated for a base year of 1985. An import coefficient of 1 indicates that demand for the product was satisfied completely through imports during the base year.

Output Multipliers.

The basic supply-demand equation for a regional economy can now be expanded by including demand terms which depend on output.

(9) $\mathbf{X} = \mathbf{AX} + (1-t)\ddot{\mathbf{O}}\ddot{\mathbf{y}}'\mathbf{X} - \hat{\mu}\mathbf{X} + (1+\hat{\mu})\mathbf{E} + \mathbf{F_1}$

where $\mathbf{F_1}$ contains all exogenous demands except for exports. Simplification of equation 9 results in the multiplier equation:

(10) $\mathbf{X} = [(\mathbf{I} - \mathbf{A} + (1-t)\ddot{\mathbf{O}}\ddot{\mathbf{y}}' + \hat{\mu})^{-1}\ (1+\hat{\mu})]\ \mathbf{E} +$

$[(\mathbf{I} - \mathbf{A} + (1-t)\ddot{\mathbf{O}}\ddot{\mathbf{y}}' + \hat{\mu})^{-1}]\ \mathbf{F_1}$

The first bracketed term is the multiplier for exports and the second bracketed term is the multiplier for other exogenous final demands, for example, exogenous consumption. The multipliers for the two types of expenditures differ because a fraction of nonexport final demands will be satisfied by imports. For impact analysis, the first multiplier is relevant if changes in final demand have already been adjusted for imports.

Earnings Multipliers.

The multipliers in equation (10) measure impacts in terms of changes in output. Alternative multipliers can be constructed to show the effect of a change in final demand on community income, or to show the effect of an exogenous change in income on total community income.

Employment and Payroll Data.

Employment and payroll data for 1981 and 1985 were pulled from tape records of County Business Patterns. Suppressed CBP data for employment was estimated by the midpoint of the specified employment range. Deleted Kansas payroll data was approximated by first multiplying the number of employees in the Kansas industry by the U.S. payroll per employee rate for that industry, then adjusting the results by a ratio of average Kansas to U.S. payrolls. A similar procedure was used for deleted Johnson County payrolls, adjusting by the ratio of average Johnson County to U.S. payroll per employee.

The concept of payroll used throughout CBP includes wages and salaries, tips, vacation pay, and other compensation paid to employees before deductions for income and social security taxes. It does not include most benefits or the employer's share of social security payments.

Agricultural Sectors.

Agricultural data was derived from two main sources, Economic Indicators of the Farm Sector (EIFS), U.S. Department of Agriculture, and Kansas Agriculture: Annual Report and Farm Facts (KA), Kansas Department of Agriculture.

Ideally, we wanted data on the value of production of crops and livestock. Surprisingly, a preliminary search of federal government statistics revealed no aggregate data on production values at the national level. We found production values for individual crops (about 100) and types (about 15). We will eventually create aggregates from the individual data. However, for the purposes of this project, we chose to use proxies for production. EIFS contains statistics on various components of farm income for the U.S. and states. The variables "cash income from marketing, crops" and "cash income from marketing, livestock" were used as proxies for U.S. and Kansas agricultural output.

Since "cash income from marketing is not published at the county level, we turned to county data from the Kansas Department of Agriculture. KA provides estimates of the value of crop and livestock production for the state and for Kansas counties. We constructed "cash income from marketing" for Johnson County by multiplying production statistics by the statewide ratio of cash income to production.

Output by Sector.

Ratios based on the 1981 U.S. Input-Output update were used to estimate 1985 output by industry for the U.S., Kansas, and Johnson County. We first converted all data to a modified set of sector definitions. For all industries except agriculture, we calculated the ratio of payroll (from CBP,

1981) to output (from the input-output table); for agriculture, we calculated the ratio of cash income from marketing (1981) to output. Output of each industry for 1985 was estimated by dividing the appropriate proxy (payroll or cash income from marketing) by the 1981 ratio for the industry.

Taxes.

National data from the Survey of Current Business was used to find the average federal income tax as a percentage of personal income for 1985 (about 12.2 percent, after adjustment of personal income for nontaxable transfers, benefits, and the employer's share of social security taxes). An additional 7 percent tax is included as an estimate of the employee's share of social security, for a federal tax share of 19.2 percent.

Information to calculate the average state income tax came from two sources. Local Area Personal Income: 1979-84 provided personal income information for Kansas (1984 was the most current information available). The Kansas Department of Revenue Annual Report supplied information on total state personal income tax collections. Overall, the state tax burden was estimated as 2.1 percent of personal income.

The combined federal and state income tax bite was estimated at 21.3 percent of personal income.

Personal Income Coefficients.

The size of the multiplier for an economy depends on the amount of income from production which is recycled locally. For industries other than agriculture, we assumed that only wage and salary income remained local. For agriculture, we estimated net farm income percentages as the ratio of value added minus depreciation to output.

Earnings Coefficients.

Earnings Coefficients are estimates of the fraction of the value of total output which recirculates in the community as personal income. The earnings coefficients contain primarily wage and salary income. We have assumed that the earnings coefficients for Kansas and Johnson County are identical. The earnings coefficients have not been adjusted for income taxes.

Kansas and Johnson County Multipliers.

For each sector in the model, we calculated the impact of a $1 change in export type demand on total output, total earnings, and total number of employees. Differences in import coefficients account for multiplier differences between the county and the state. With a few exceptions, county multipliers are smaller than state multipliers. For Johnson County, multipliers range from 1.27 (oil and gas) to 2.45 (plastic materials and synthetics). For the state, multipliers fall between 1.24 (oil and gas) and 2.93 (food processing). The small multipliers for oil and gas production are probably due to the failure of the model to account for property type income flowing to Kansas resource owners.

TABLE A1
MULTIPLIERS FOR OUTPUT, EARNINGS AND EMPLOYMENT BY 45 SECTORS FOR THE STATE OF KANSAS

Sector Description	#	MULTIPLIERS		
		OUTPUT MULTIPLIERS	EARNINGS MULTIPLIERS	EMPLOYMENT MULTIPLIERS
livestock	1	2.8058	0.3123	0.0000114500
crops	2	2.0515	0.2757	0.0000085932
forestry	3	1.8509	0.2194	0.0000145262
agricultural services	4	2.3546	0.4905	0.0000355693
metal and nonmetalic mineral mining	5	2.2209	0.4788	0.0000224897
coal mining	6	1.9667	0.3998	0.0000178261
oil and gas production	7	1.2351	0.0700	0.0000034978
stone, gravel, and clay	8	2.3066	0.5844	0.0000295632
construction	9	2.1472	0.4395	0.0000240910
food processing	10	2.9339	0.3723	0.0000188316
tobacco processing	11	1.6322	0.1802	0.0000053879
fabrics and apparel	12	1.9308	0.3733	0.0000254694
lumber and wood	13	2.1262	0.4120	0.0000270403
furniture and fixtures	14	2.1486	0.4833	0.0000293199
paper products	15	2.2430	0.3653	0.0000203631
printing	16	2.6074	0.5761	0.0000340007
chemicals	17	2.4331	0.2449	0.0000126422
plastic materials and synthetics	18	2.8333	0.3339	0.0000166382
drugs and preparations	19	2.3008	0.3533	0.0000181004
paints	20	2.6400	0.3680	0.0000194808
petroleum refining	21	2.3024	0.1189	0.0000059535
rubber, rubber and misc. plastic prod.	22	2.0374	0.3964	0.0000201896
leather products	23	2.0082	0.4119	0.0000305725
glass, stone, and clay products	24	2.5432	0.5099	0.0000255742
iron, steel, and other metals	25	2.0269	0.3507	0.0000190586
metal products, ordinance, structural m	26	1.9762	0.4185	0.0000226047
engines and machinery	27	2.1160	0.4835	0.0000253110
computers, computing equipment	28	2.0403	0.4477	0.0000228501
electrical equipment and appliances	29	2.0057	0.4401	0.0000243024
electronic equipment and parts	30	2.2707	0.5481	0.0000355861
motor vehicles, aircraft, trans. equip.	31	2.3345	0.4783	0.0000218805
scientific and photograhic equipment	32	2.1114	0.5095	0.0000288073
misc. manufacturing	33	1.9932	0.3969	0.0000239630
transportation and warehousing	34	2.2820	0.4384	0.0000234159
communications except radio and T.V.	35	1.8084	0.4675	0.0000205909
radio, T.V., business services	36	1.7252	0.3487	0.0000220396
electric services, utilities	37	2.3614	0.2254	0.0000108282
wholesale and retail trade	38	1.9761	0.4871	0.0000331268
finance, insurance	39	2.1695	0.5930	0.0000325711
real estate and rental	40	1.3175	0.0830	0.0000052418
hotels, personal services	41	1.9679	0.4749	0.0000434059
eating and drinking places	42	2.4702	0.4109	0.0000450500
automobile repair and services	43	2.0193	0.3099	0.0000189461
amusements	44	2.0514	0.4088	0.0000399501
health, education, social services	45	2.3080	0.7098	0.0000492947

TABLE A2
MULTIPLIERS FOR OUTPUT, EARNINGS AND EMPLOYMENT BY 45 SECTORS FOR JOHNSON COUNTY

Sector Description	#	OUTPUT MULTIPLIERS	EARNINGS MULTIPLIERS	EMPLOYMENT MULTIPLIERS
livestock	1	1.6687	0.1872	0.0000066352
crops	2	1.8399	0.2721	0.0000082137
forestry	3	1.7150	0.2250	0.0000088245
agricultural services	4	2.0928	0.4847	0.0000333601
metal and nonmetalic mineral mining	5	1.8012	0.4437	0.0000094031
coal mining	6	1.6974	0.3733	0.0000082696
oil and gas production	7	1.2653	0.0766	0.0000035484
stone, gravel, and clay	8	1.9591	0.5642	0.0000215053
construction	9	1.9774	0.4372	0.0000210966
food processing	10	1.8000	0.2475	0.0000136750
tobacco processing	11	1.3942	0.1581	0.0000045827
fabrics and apparel	12	2.2237	0.4640	0.0000291181
lumber and wood	13	1.7732	0.3756	0.0000248468
furniture and fixtures	14	2.0205	0.4881	0.0000273574
paper products	15	1.8483	0.3321	0.0000195634
printing	16	2.3463	0.5643	0.0000311335
chemicals	17	2.0250	0.2201	0.0000105040
plastic materials and synthetics	18	2.4493	0.3146	0.0000107638
drugs and preparations	19	2.1983	0.3659	0.0000177959
paints	20	2.2983	0.3500	0.0000114741
petroleum refining	21	1.5208	0.0777	0.0000035826
rubber, rubber and misc. plastic prod.	22	1.8380	0.3916	0.0000226784
leather products	23	1.9406	0.4317	0.0000296344
glass, stone, and clay products	24	2.0464	0.4614	0.0000253709
iron, steel, and other metals	25	1.6919	0.3210	0.0000159799
metal product, ordinance, structural mt	26	1.7540	0.4007	0.0000196688
engines and machinery	27	1.8720	0.4583	0.0000222895
computers, computing equipment	28	2.1732	0.5110	0.0000244461
electrical equipment and appliances	29	2.0405	0.4794	0.0000248936
electronic equipment and parts	30	2.2028	0.5774	0.0000341196
motor vehicles, aircraft, trans. equip.	31	1.7313	0.3768	0.0000159352
scientific and photograhic equipment	32	2.0406	0.5294	0.0000251463
misc. manufacturing	33	1.9130	0.4084	0.0000222289
transportation and warehousing	34	1.9730	0.4311	0.0000215312
communications except radio and T.V.	35	1.7892	0.4876	0.0000194708
radio, T.V., business services	36	1.7211	0.3677	0.0000204640
electric services, utilities	37	1.4901	0.1596	0.0000069835
wholesale and retail trade	38	1.9016	0.5027	0.0000287592
finance, insurance	39	2.2480	0.6459	0.0000312868
real estate and rental	40	1.3679	0.0970	0.0000056515
hotels, personal services	41	1.8909	0.4933	0.0000418923
eating and drinking places	42	1.8685	0.3531	0.0000365089
automobile repair and services	43	1.6758	0.2631	0.0000143238
amusements	44	1.9868	0.4280	0.0000375070
health, education, social services	45	2.1939	0.7249	0.0000416460

TABLE A3
IMPORT COEFFICIENTS FOR KANSAS AND JOHNSON COUNTY
(Calculated Using Modified Location Quotients Method)

Sector Description	#	KANSAS IMPORT COEFFICIENT	JOHNSON CO IMPORT COEFFICIENT
livestock	1	0.0000	0.7431
crops	2	0.0000	0.8305
forestry	3	0.7330	1.0000
agricultural services	4	0.5355	0.0000
metal and nonmetalic mineral mining	5	0.9329	1.0000
coal mining	6	0.7729	1.0000
oil and gas production	7	0.0000	0.6867
stone, gravel, and clay	8	0.0000	0.0000
construction	9	0.1647	0.0000
food processing	10	0.0000	0.4890
tobacco processing	11	1.0000	1.0000
fabrics and apparel	12	0.6876	0.2199
lumber and wood	13	0.5060	0.7006
furniture and fixtures	14	0.7213	0.9139
paper products	15	0.4140	0.6246
printing	16	0.0000	0.0000
chemicals	17	0.0000	0.0000
plastic materials and synthetics	18	0.9508	1.0000
drugs and preparations	19	0.0000	0.0000
paints	20	0.5930	1.0000
petroleum refining	21	0.0000	0.5008
rubber, rubber and misc. plastic prod.	22	0.0000	0.1254
leather products	23	0.9546	0.7881
glass, stone, and clay products	24	0.0000	0.4968
iron, steel, and other metals	25	0.6987	0.8454
metal products, ordinance, struc. metal	26	0.5721	0.6577
engines and machinery	27	0.1138	0.4846
computers, computing equipment	28	0.7376	0.4992
electrical equipment and appliances	29	0.6316	0.0000
electronic equipment and parts	30	0.8033	0.4635
motor vehicles, aircraft, trans. equip.	31	0.0000	0.9758
scientific and photograhic equipment	32	0.6920	0.3273
misc. manufacturing	33	0.7286	0.4279
transportation and warehousing	34	0.1018	0.0857
communications except radio and T.V.	35	0.0753	0.0000
radio, T.V., business services	36	0.4075	0.0000
electric services, utilities	37	0.0000	0.9430
wholesale and retail trade	38	0.0765	0.0000
finance, insurance	39	0.2026	0.0000
real estate and rental	40	0.3798	0.0000
hotels, personal services	41	0.2931	0.0000
eating and drinking places	42	0.1121	0.0147
automobile repair and services	43	0.0364	0.0000
amusements	44	0.5792	0.4363
health, education, social services	45	0.2406	0.1110

APPENDIX C
PARTICIPATING FIRMS

We would like to thank the firms which participated in the survey for this study. The following firms are among those which participated:

Central Telecom
United Telecom
Western Life Insurance
St. Paul Fire and Marine Insurance Company
Allstate Insurance
Doubletree Hotel
Metcalf State Bank
Tippin's Restaurants, Inc.
Chevrolet Motor Division
Sun Publications, Inc.
Met First Financial

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