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Policy Research Institute**

**Business Taxes and Costs in Kansas and Nearby States:
2001 Update**

Prepared for
Kansas, Inc.

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Dr. David Burress was principal investigator for the study and co-author of this report. Pat Oslund was the lead author. Luke Middleton assisted in all phases of the research and authored several sections. All three authors are Research Economists at PRI. Joshua Rosenbloom, Director of the Center for Economic and Business Analysis at PRI, reviewed the manuscript and provided feedback throughout the project. Susan Mercer, Carol Bray, and Thelma Helyar provided editorial assistance.

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The opinions expressed in this report are solely those of the authors.

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INTRODUCTION

Since the early 1980s, responsibility for the provision of many goods and services has shifted from the federal government to state and local agencies. Accompanying this shift in responsibilities has been an increase in state and local taxes. These taxes grew much faster than personal income during the 1980s, and slightly faster during the 1990s.

State and local governments have had to perform a difficult balancing act in order to meet revenue needs, preserve tax systems that are considered “fair” by the citizens, and maintain a business climate that is attractive, or at least not discouraging, to businesses. In many states (though not in Kansas), the pressure was relieved temporarily by budget surpluses of the late 1990s. But the underlying challenge remains, and the current economic slowdown has put most states under pressure again. The means by which state and local governments are meeting these challenges are the topic of this report.

This report is based on an investigation of business taxes and costs in Kansas, the region, and the nation. The study was funded by Kansas, Inc. and was performed by the Policy Research Institute (PRI; formerly, the Institute for Public Policy and Business Research) at the University of Kansas. This study updates similar work published by PRI and Kansas, Inc. in 1990, 1992, 1995, 1997, and 1999. The purpose of the study is to provide policy makers with background information on state and local tax structure, and to assess the relative competitiveness of Kansas as a location for doing business.

The study focuses on business taxes in six states: Kansas, and the nearby states of Colorado, Iowa, Missouri, Nebraska, and Oklahoma. We compare basic tax rates, tax incentives, and other business costs for these states in Chapters 1-7 of the report. In Chapter 8, we examine the results of a model that simulates the taxes and costs that would be faced by a representative firm in each of several industries.

MAJOR FINDINGS

General

- **The relative burden of state and local taxation in Kansas is fairly typical of that found in the U.S. as a whole.** Year 2000 state and local tax revenues equal about 10.5 percent of personal income in both Kansas and the U.S.
- **The relative burden of state and local taxation in Kansas is slightly higher than the regional average.** In 1998 state and local tax revenues averaged 9.9 percent of personal income in the surrounding states (Colorado, Iowa, Missouri, Nebraska, and Oklahoma; year 2000 data were not available).
- **The total tax and non-tax costs of doing business in Kansas are lower than the regional average for most classes of firms that were examined in this study.** Kansas is a regionally and nationally competitive place to do business.
- **The availability of tax incentives in Kansas, particularly the property tax abatement, balances out most of the “negatives” of the Kansas tax system for firms that qualify for incentives.** Kansas also has the advantage of other relatively-low business costs, including costs for labor, land, and natural gas.

Property tax

- **Property taxes are the single biggest component of state and local taxes in Kansas, the region, and the U.S.** Property taxes provide 29 to 30 percent of total state plus local tax revenues in Kansas and in the U.S. They provide around 26 percent of revenues in the rest of the six-state region.
- **Since 1981, Kansas local governments have reduced their reliance on the property tax.** In 1981, property taxes comprised about 91 percent of local taxes in Kansas; now they comprise about 76 percent.
- **The property tax structure tends to put some established Kansas firms at a disadvantage compared with similar firms in the region.** The effective property tax rate on machinery and equipment remains higher in Kansas than in most other states in the region. This can present a disadvantage to highly capital-intensive firms not eligible for tax abatements. However, other tax and non-tax cost advantages in Kansas generally offset this effect.

Corporate Income Tax

- **Corporate income taxes are small and declining as a share of state and local tax collections in Kansas and elsewhere.** Kansas corporate income taxes provided 6 percent of state and local tax collections in 1981 but now contribute 3.5 to 4 percent, about the same as in the U.S. Other states in the region rely on the corporation tax for 2.5 to 3 percent of total state plus local tax revenues.
- **The corporate income tax structure tends to put some new and expanding Kansas firms at a disadvantage compared with similar firms in the region.** For firms that do business in many states, it is important to consider how much of the firm's total income any individual state may tax. The method used to apportion income in Kansas tends to disadvantage certain firms that locate most of their property and payroll in Kansas, yet sell most of their output to out-of-state markets. However, other tax and non-tax cost advantages in Kansas generally offset this effect.

Sales tax

- **Sales taxes are a large and growing share of state and local tax collections in Kansas.** Sales taxes averaged 22 percent of total tax collections in Kansas during the 1980s; this rose to 27 percent in the 1990s. In the region surrounding Kansas, sales taxes averaged 26 percent of state and local tax collections during the 1980s, about the same as in the 1990s.

Individual Income Tax

- **The individual income tax is the third largest state and local revenue source.** It collects around 24 percent in Kansas and the U.S., and around 26 percent in the region.

EXECUTIVE SUMMARY

Chapter 1: An Overview of State and Local Taxation

- Based on two key indicators of the overall level of state and local taxation for 2000, the Kansas tax load was in the average range for the nation. When comparing state and local taxes per capita, Kansas (\$2,929) was slightly below the national average (\$3,077). When comparing state and local taxes as a percent of income Kansas (10.5 percent) was just about the same as the national average (10.4 percent). Year 2000 data were not available for the region; in 1998 Kansas was above the regional average on both measures.
- An examination of the composition of taxes at the state and local level shows Kansas once again to be quite similar to the U.S. average. During 1994-2000, roughly 30 percent of state and local revenues came from property taxes; 25 percent from sales taxes; 20 percent from individual income taxes; and four percent from corporate income taxes.

Chapter 2: The Individual Income Tax

- Individual income taxes are the third largest source of state and local revenue. Nationwide, individual income taxes provide over one-third of total state-level tax revenues. Differences in individual income taxes across states could affect economic development through their effect on corporate managers and key employees, and through their effect on non-corporate businesses.
- In order to make valid comparisons of tax levels across states, it is important to design a measure that takes rates and brackets, exemptions, and deductions into account. One such measure is the effective tax rate paid by a representative household. The representative household used for this study consists of a married couple with two dependents and annual adjusted gross income of \$60,000. After accounting for federal income tax effects, the effective state tax rate at this income level ranges from a low of 2.1 percent in Colorado to a high of 4.7 percent in Oklahoma. Kansas falls in the middle at 3.4 percent.
- If the federal income tax is not taken into account, the Kansas effective tax rate is about 4 percent. The deductibility of the Kansas state income tax from the federal taxable income reduces the federal tax by about 0.6 percent of income. Consequently, the effective Kansas income tax burden on our representative household is about (4.0 minus 0.6) percent, yielding 3.4 percent of income.

Chapter 3: Corporate Income Tax

- Corporate income taxes comprise only a small percentage of total state and local tax revenues: 3.5 to 4 percent both in Kansas and nationally. They are nevertheless an important cost to businesses. Of taxes paid by firms to state and local governments, the corporate income tax generally ranks second in dollar amount after the property tax for the “export-base” firms that are the major focus of this study. After effects of the federal income tax are accounted for, corporate income tax rates in the region range between 3 and 6.6 percent of taxable income. Kansas (4.8 percent) is about in the middle. (Accounting for the “federal offset,” the deductibility of state taxes from federal taxable income, income tax reduces the absolute tax burden, but does not affect relative rankings between states.)
- The income tax that will actually be paid by a firm depends not just on the tax rate, but also upon the method that the state uses to apportion income and on the types and amounts of credits for which the firm may qualify. An evenly-weighted three-factor formula was, until recently, the most widely-used method of allocating income of multi-state firms. However, formulas that give extra weight to sales are gaining momentum. Export-oriented firms can gain an advantage by locating their property and payroll in states that allow a sales-only formula. Kansas does have optional formulas that provide extra weight for sales.
- Economic development tax credits are abundant in all of the states examined in this study. Most important among these credits are those aimed at stimulating jobs and investment. Many states enhance these job and investment credits in geographically-targeted enterprise zones. Several states have incentives targeted at stimulating the growth of high-quality jobs. Examples of this approach include Kansas and Iowa.

Chapter 4: Sales Tax

- Sales taxes comprise one-fourth of state and local tax revenue. The impact of the sales tax is shared between consumption, investment, and production. States differ greatly in their definitions of the sales tax base and in the exemptions they allow for various goods and services. From the point of view of a state's competitiveness, exemptions on machinery and equipment, installation (construction) and repair, and energy stand out as providing significant cost savings to firms.
- In Kansas, Missouri, and Nebraska, state plus local sales tax rates average around seven percent in metropolitan areas. In Colorado, Iowa, and Oklahoma they average around five to six percent. Rates are generally less in non-metro areas.

Chapter 5: Property Tax

- Property taxes comprise an essential source of local revenues for all of the states examined by this study. Historically, Kansas has placed greater-than-average reliance on the property tax for raising state and local revenues than the U.S. or region. That reliance has declined, due partly to the state's assumption of responsibility for school finance initiated in 1991, and partly to increases in local sales tax rates (offsetting property taxes). In recent years, the share of state and local tax revenues derived from the property tax in Kansas has been similar to the national average and still somewhat higher than the regional average.
- Comparisons of property tax rates across locations are complicated by features such as varying assessment ratios and appraisal inaccuracies. We use an "effective tax rate" consisting of average taxes paid per actual dollar market value of property.
- With respect to both residential and commercial/industrial property (before any special abatements are applied), effective tax rates in Kansas have declined substantially since 1991. However, rates on machinery and equipment have risen.
- In metropolitan areas within the six-state region, effective residential rates range from 0.8 to 1.9 percent; Kansas averages 1.2 percent. Commercial/industrial real estate rates average from 1.2 to 2.8 percent; Kansas averages 2.7 percent.
- Iowa does not tax machinery and equipment. For Kansas and most other states in the region, effective rates on machinery and equipment in metropolitan areas are between two percent and three percent, with Kansas near the upper end of the range (before abatements are applied). In Oklahoma they are around 1.5 percent. Oklahoma is the only state in the region that taxes inventories.
- Property tax abatements are a frequently-used tool for economic development, despite concerns about their effectiveness and efficiency. Kansas tax abatements are potentially very generous: Kansas allows abatements of up to 100 percent for 10 years on most types of business property and for most industries. In Kansas, as in most states, the decision to grant an abatement is made locally. While Kansas has a requirement for cost-benefit analysis of abatements, there are no absolute standards for whether the abatement should be granted.

Chapter 6: Unemployment Insurance and Workers Compensation

- Kansas offers a moderate environment with respect to unemployment insurance costs. The average Kansas employer pays a UI tax rate of 0.6 percent, compared with 0.5 percent nationally and even lower rates in the surrounding states. Furthermore, given the steadily-decreasing UI trust fund balance, it is not unlikely that rates will need to

be raised even higher in the next few years if the current level of benefits is to be sustained.

- The average workers compensation rate in Kansas has fallen substantially since 1994. Although costs did go up slightly in 2001, Kansas still had worker compensation costs in 2001 that were lower than average costs for the region by 12 percent and lower than the national average by six percent.

Chapter 7: Other Business Costs

- C In general, Kansas offers a competitive business cost climate. Labor costs, the most important of the costs that we consider, are in the mid-range for the region and are much lower than for the nation as a whole. Industrial gas prices are well below the national average, while industrial electricity prices are approximately equal to the national average. Land costs in the entire region as a whole are well below the national average. For specific Kansas locations, Wichita stands out as having some of the lowest land costs in the nation.

Chapter 8: Total Cost of Doing Business

- This report studies the total cost of doing business (taxes plus other costs), which is an important factor in investment decisions and locational choice. However, many other factors are also important, including distance to markets, industrial dynamism, synergy from having a critical mass of similar firms, local risk capital, productivity, and quality of life. Therefore having a low cost of business does not by itself guarantee growth. It is significant that the highest cost location in most of our scenarios is Colorado—yet Colorado has the fastest growing and arguably the wealthiest economy in the region.
- In general, Kansas is meeting its strategic goal of being cost-competitive without being a low-tax state. Being the lowest cost location usually implies low wages and a low level of government services, which are not desirable policy goals. The pressing challenge for Kansas now is to improve its competitiveness in terms other than the dollar cost of doing business.
- For all types of firms examined, Kansas is an average to moderately-attractive business location relative to the region. Kansas costs per employee are at or below the regional average for most industries examined. Costs per employee are substantially lower in Kansas than in Colorado or Missouri, which have considerably higher labor costs. Kansas costs are higher than in Nebraska, Oklahoma, and usually Iowa.
- Since this region is relatively low in costs compared to the nation, Kansas appears to be an attractive location from a nation-wide point of view as well.

- The relative advantages of Kansas business locations for manufacturers have followed a clear pattern over time. First, Kansas has been, and remains, a moderately low-cost business location for new and expanding manufacturers, both with respect to the region and the U.S. Second, Kansas has had some tax disadvantages for established firms that cannot make use of special credits or abatements for new investments. However, other tax and cost advantages have generally offset those tax disadvantages.
- The largest single state and local tax burden on new manufacturing firms tends to come from the state income tax. The use of a single factor formula can provide substantial tax advantages for firms that sell most of their output to consumers in other states, or to firms that locate property and payroll in a state without bringing any new sales into the state.
- The largest single burden on established manufacturing firms tends to come from the property tax. Relatively high tax assessment ratios on business property are the primary cause.
- A simulation of the effects of eliminating the Kansas property tax on machinery and equipment found that it increased the amount of profits of new firms insignificantly (less than a percent), but could increase profits by up to four percent for established firms not eligible for tax abatements.

CHAPTER 1: OVERVIEW OF STATE AND LOCAL TAXATION

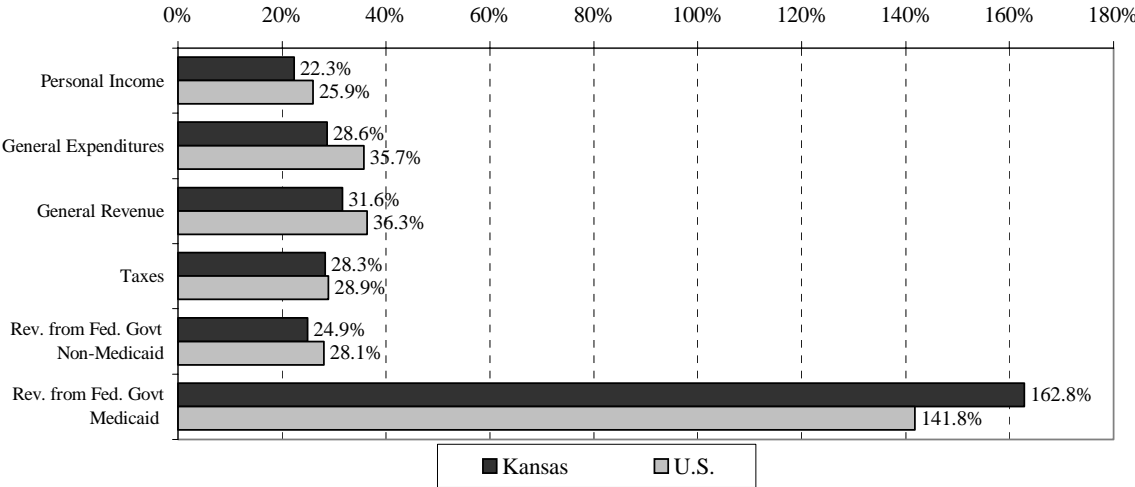
The Increasing Importance of State and Local Expenditures

The Reagan federalism initiatives of the early 1980s marked a distinct shift in state and local government finance. State and local governments were faced with growing responsibility for health and welfare programs, and federal support for these programs did not keep pace. At the same time, “unfunded mandates” from the federal government required additional state and local spending for education, environmental programs, and other services [Quigley and Rubinfeld, 1996]. This growth was financed from three primary sources: increases in state and local taxes, increases in miscellaneous charges and fees (such as university tuition and local hospital fees), and increases in intergovernmental transfers from the federal government.

During the early to mid 1980s, federal intergovernmental transfers grew in real terms, but far more slowly than other state and local revenue sources, and hence constituted a declining percentage of the state and local revenue base. Later, during the Bush and Clinton administrations, federal transfers to the states increased at a much faster rate, but this was entirely driven by an explosion in medical payments, mainly under the Medicaid program (see Figure 1-1). Medical payments are a pass-through to individuals and cannot be used to fund other obligations of state and local government. State and local

Figure 1-1:

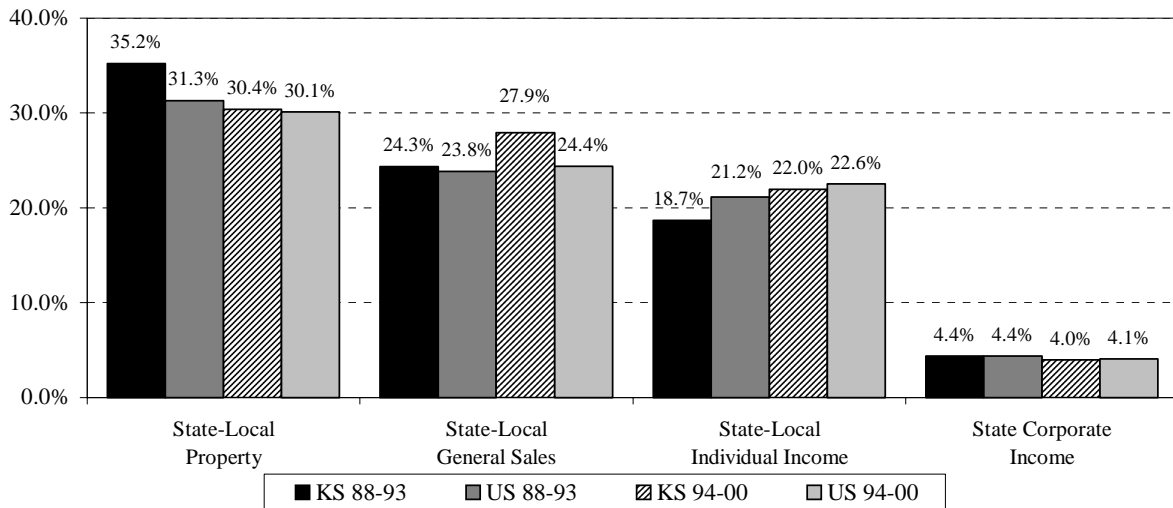
Growth in Real Personal Income, Real State and Local Expenditures, and Real State and Local Revenues, 1988-1998



Sources: U.S. Bureau of the Census, *State and Local Government Finances* and U.S. Bureau of Economic Analysis, *State Personal Income*

Figure 1-2:

**Composition of State and Local Tax Revenues
1988-93 Compared with 1994-00**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

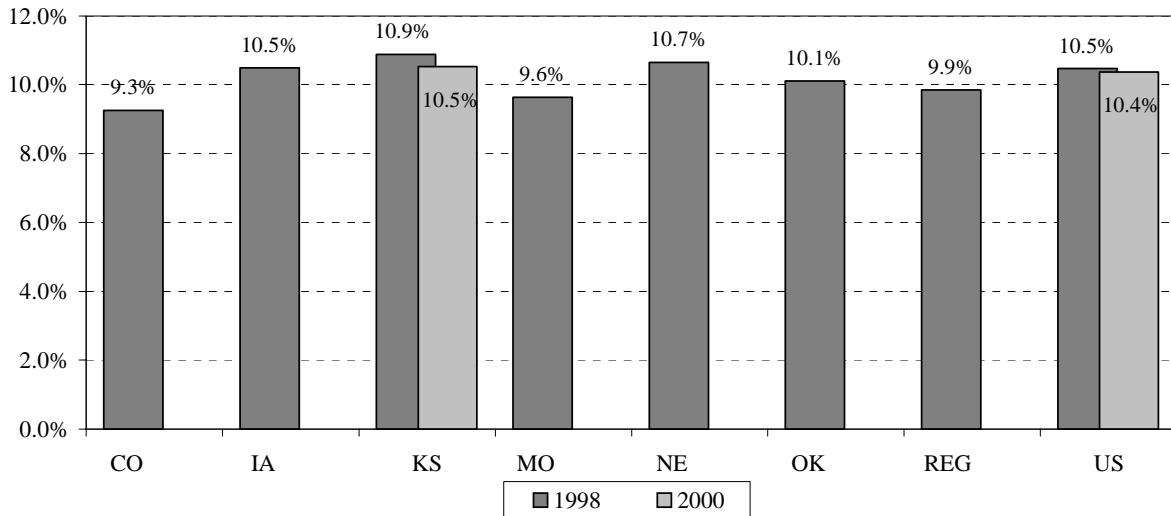
expenditures and revenues (other than Medicaid) grew somewhat faster than federal non-Medicaid transfers, which in turn grew slightly faster than personal income. Trends in Kansas mirrored trends in the U.S., but with slightly smaller real growth rates. All of these growth rates were in the range of 2 percent to 3 percent, compounded annually—except Medicaid, which grew at annually compounded rates of 9 percent (U.S.) and 10 percent (Kansas). Figure 1-1 shows available growth data, which extend through 1998.

Taxation has been a major concern in state legislatures over the last two decades, although the rate of tax law innovation recently seems to have died down somewhat. The states share the common problem of financing government services, but differ substantially in the ways they raise revenue. In other words, both individual states and localities employ a variety of tax structures. In gross outline, the Kansas tax structure has been rather typical of U.S. states, with roughly 30 percent of state and local revenues coming from property taxes; 25 percent from sales taxes; 20 percent from individual income taxes; and four percent from corporate income taxes (See Figure 1-2 for details).¹ In the last decade, Kansas has reduced its reliance on property taxes somewhat, while increasing its reliance on sales taxes and individual income taxes. This is similar to national trends.

¹ The remaining 21 percent of tax revenues, not displayed, come from the motor fuel tax and other miscellaneous fees and taxes. We have compared multi-year averages because the data fluctuate from year to year.

Figure 1-3

**State and Local Tax Revenue as
Percent of Personal Income, 1998 and 2000**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Our study will describe state and local tax structures and, to a lesser extent, state and local expenditures. The study identifies patterns and trends in state and local taxation. The study focuses on a region consisting of six states: Kansas and the nearby states of Colorado, Iowa, Missouri, Nebraska, and Oklahoma. Appendix 1 contains a discussion of data sources and methods.

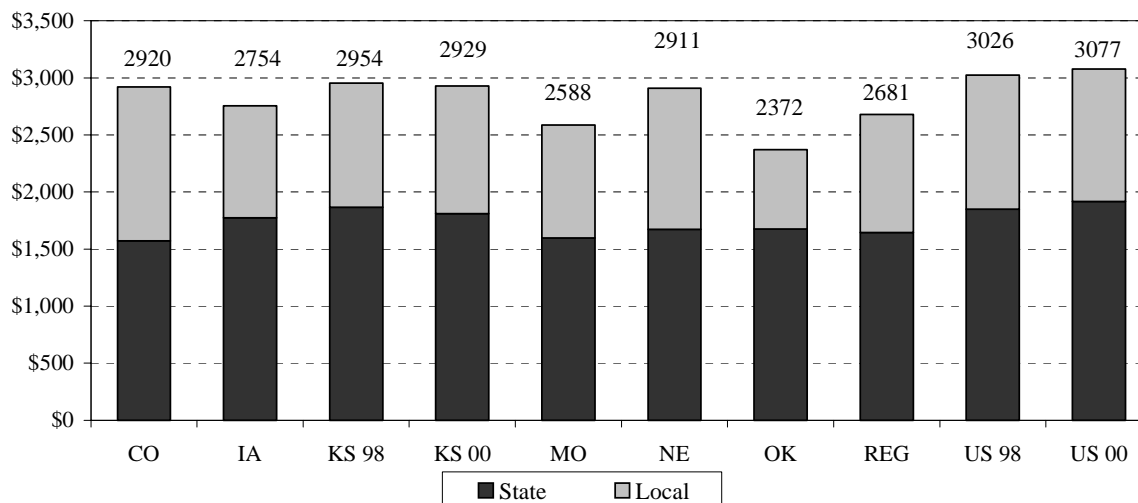
Comparisons of Tax Revenues

One indicator of the general level of taxation in a state is the ratio of state and local taxes to personal income (Figure 1-3). In most states, state and local taxes claim an amount equal to between 9 percent and 11 percent of income. In 2000, Kansas (10.5 percent) was very close to the U.S. average (10.4 percent). There is substantial year-to-year variation in these data: the Kansas ratio fell from a 1998 value of 10.9 percent. In 1998, Kansas had the highest ratio in the region; the lowest ratio was 9.3 percent in Colorado. (Year 2000 data were available for Kansas but not the region.)

Per capita tax collections are another indicator of the level of taxation. These figures also provide some information about the availability of the funding for state and local services, since taxes are the largest source of state and local government revenue. Figure 1-4 shows that (as of 1998) the states in this region fell into two groups with respect to tax collections. The higher taxed states (Colorado, Iowa, Kansas, and Nebraska) collected revenues of about \$2,750 to \$2,950 per capita, or a little less than the U.S. average of \$3,077.

Figure 1-4:

**Per Capita State Plus Local Tax Revenues
1998 and 2000 (in real 2000 dollars)**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

The lower taxed states in the region, Missouri and Oklahoma, both collected less than \$2,600 per capita.

Ratios of gross taxes to personal income and to population provide a rough guide to tax levels, but they are not especially accurate measures of the tax burden actually experienced by taxpayers. For example, they ignore the fact that some taxes are “exported” to persons and firms outside the state. They also ignore the distribution of taxes across households and firms in different situations. Also, personal income is an incomplete measure of true ability to pay because it leaves out wealth, cost of living, number of dependents, non-monetary resources, and many other factors.

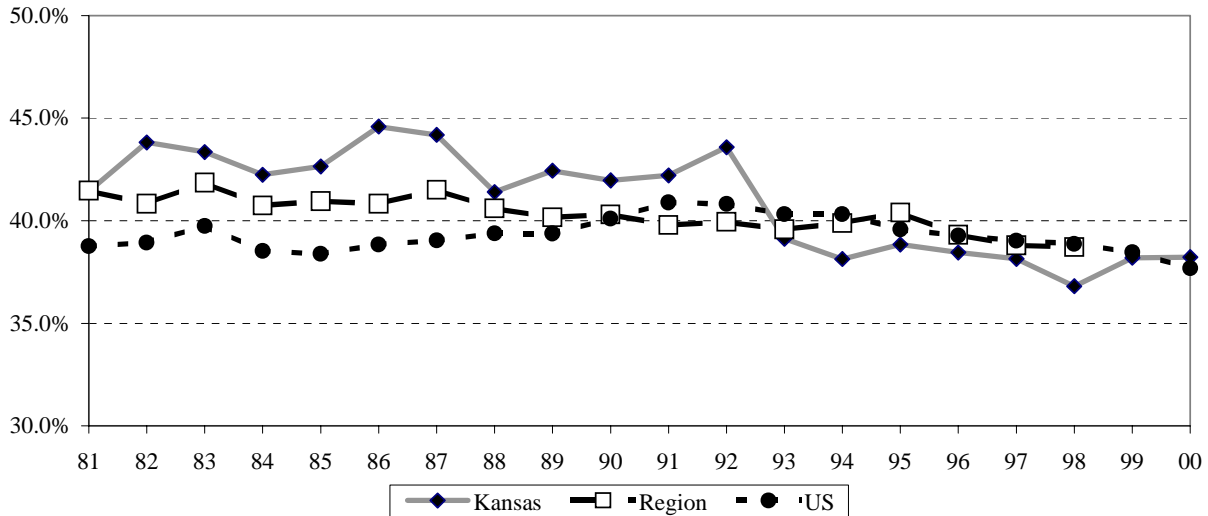
State and Local Taxes

In addition to the state government, many different local governments are empowered to collect taxes. Counties, cities, school districts, and other special districts impose their own sets of taxes and tax rates. A very large number of local governments (3,950) operate in Kansas.² Kansas has the highest total number of local governments in the region and the fifth-highest number in the nation. Not all of these units can collect taxes; the number of *taxing* local governments was not available.

² Data are provided in U.S. Bureau of the Census, *1997 Census of Governments, Volume 1, Government Organization*. Counts of local governments in surrounding states are: Colorado-1,869; Iowa-1,876; Missouri-3,416; Nebraska-2,894; Oklahoma-1,799.

Figure 1-5:

**Local Tax Revenue as a Share of
Total State Plus Local Tax Revenue, 1981-2000**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Kansas has recently collected about 38 percent of its taxes at the local level, which is close to the regional average³ as well as the U.S. average. Of other states in the region, in 1998 Oklahoma at one extreme collected only 30 percent of total taxes locally, while Colorado at the other extreme collected 48 percent. Kansas local shares, and to a lesser extent average regional local shares, have tended to decline somewhat over time, while the U.S. average share has fluctuated around 39 percent . (See Figure 1-5.)

There is no simple relationship, however, between the amount of funds collected at the local level and the degree of support for locally provided services. Most states redistribute a substantial amount of funds from state to local jurisdictions, primarily to support education, and secondarily to support public welfare programs. State transfers have recently constituted between 44 percent and 48 percent of all local funds from state and local sources, in Kansas as well the U.S. and regional averages. Individual states in the region varied from 35 percent to 55 percent. For FY2002 Kansas budgeted about \$3.3 billion in aid to local government units. About \$2.3 billion of this state aid was earmarked for education.

³ All regional averages are calculated to exclude Kansas.

Composition of State-Level Taxes

Not only do the states differ in the breakdown between local and state taxes, but they also differ in the importance of various taxes within the state-level tax structure. The individual income tax provided the single largest source of state-level tax revenue, in Kansas (38 percent), the U.S. (34 percent), and the region (42 percent). It is followed closely by the general sales tax (35 percent in Kansas, 33 percent in the U.S., 30 percent in the region). On average, the states in the region receive about 4.4 percent of their state-level tax revenue from corporate income taxes. Kansas stands out in the region with corporate taxes comprising 6.6 percent of state revenue in 1998, close to the national average of 6.5 percent.

All of the states in the region except Iowa impose severance taxes on natural resource extraction. However, only in Oklahoma does this provide a substantial share of state finances, in recent years raising between \$200 million and \$400 million or between four percent and eight percent of state tax revenues. In Kansas it has recently raised between \$40 million and \$70 million, or less than two percent of state tax revenues.

Composition of Local-Level Taxes

Local governments depend primarily on property taxes for raising local revenue—about 77 percent in Kansas, 67 percent in the region, and 73 percent in the U.S. Within the region, the share of property taxes in local tax revenues runs from a high of about 91 percent in Iowa to a low of about 52 percent in Oklahoma. Since the mid-1980s, the share of property taxes in total local tax revenue has remained relatively constant for the nation as a whole. In Kansas, the share has declined significantly, from 91 percent in 1981 to the current level. This decline resulted partly from replacing much of the school district property tax with state-wide property and income taxes, and partly from increases in local sales tax rates.

A second major source of local tax revenue is the general sales tax. Nationally, sales taxes have recently provided between 11 and 12 percent of local tax revenue. Within the region, the states have very different patterns. Oklahoma currently collects close to 42 percent of local tax revenues in the form of local sales taxes, while Iowa collects only about four percent from this source. Kansas currently collects 17 percent of local tax revenues from the sales tax, increasing rather steadily from three percent in 1981.

Consequences of State and Local Tax Structures

Raising revenue for public services is the goal of any state and local tax system. However, the composition of state and local taxes has important consequences for the stability and long-run growth of tax revenues, the distribution of the tax burden among social groups, the overall efficiency of the economy, as well as specific economic effects such as the location of industry. We will sketch some of the issues here.

Revenue stability and growth potential

An individual tax is stable if it exhibits only small fluctuations in its revenue-generating ability between periods of recession and expansion. A system as a whole is stable if fluctuations in total revenue between periods of recession and expansion are small. Many studies find property taxes to be the most stable taxes, income taxes to be the least stable, with sales taxes somewhere in-between.

While the income tax is probably the least stable element of the tax system during short run business cycle fluctuations, it also offers the best potential for long-term revenue growth - i.e. it is stable in the long run [White, 1983]. That is, the income tax automatically generates new revenues as real income expands over long periods of time . A balanced tax system will make use of a variety of taxes to combine elements of stability and growth-potential.

Equity

Equity (or fairness) is a second standard by which to judge tax systems. The states have a difficult balancing act to perform in providing stable revenue sources while maintaining a tax system that is perceived as fair.

Vertical equity refers to relative incidence of the tax system on families at different levels of income or ability to pay. Under a progressive tax, lower income families pay a smaller percentage of their total income in taxes than do higher income families. Under a proportional tax, lower income families pay out the same percentage of their incomes as higher income families. Under a regressive tax, they pay out a greater percentage. Many authors have examined the progressivity of individual taxes and of state and local tax structures [Pechman and Okner, 1974; Pechman, 1985; Phares, 1990]. In general, the studies have concluded that:

- C State and local tax systems as a whole are probably regressive on net, but in any case are much less progressive than the federal tax system.
- C Particular state and local taxes fall in the range of regressive to mildly progressive.
- C Income taxes are usually progressive. However, in some states with flat tax rates, they are proportional to mildly regressive.
- C Sales taxes are regressive, placing a higher burden on low income families than on higher income families.
- C Whether property taxes are progressive or regressive is complicated [Aaron, 1975; Mieszkowski and Zodrow, 1989]. In general, the portion of the tax that falls on either owned or rented residential property is regressive. The portion that falls on non-residential urban property is progressive.

Many states attempt to ameliorate the regressive aspects of the sales tax. For example, almost all states exempt prescription medicines. Within the region, Colorado, Iowa, and Nebraska also exempt food, and Missouri taxes it at a reduced rate. Most states also have income tax credits to offset part of property taxes or sales taxes for the most disadvantaged households.

Horizontal equity refers to equality of the tax burden between households that are similarly situated, especially with respect to ability to pay. However governments usually do not make much effort to equalize taxes with respect to ability to pay; instead they attempt to equalize taxes with respect to specific tax bases.⁴

Most importantly, the property tax has a pronounced tendency to differ across households and firms because of differences that reflect assessment practices rather than underlying differences in the value of property. For that reason, most states have an elaborate apparatus to oversee local property tax assessments and keep assessment errors within reasonable bounds. This apparatus is described further in Chapter 5.

Benefit taxation refers to the idea that taxes should be akin to private market prices, in which you pay for what you get. In other words, it is argued that taxes should be paid in rough proportion to the value of government services received. In the purest case, governments use fixed and direct fees rather than taxes to pay for services such as license registration and building inspection. An intermediate case is the gasoline tax, insofar as gasoline use depends roughly on the number of miles driven on public roads, and also on the weight of the vehicle (which affects wear and tear on highways). The benefit approach is an alternative which directly conflicts with the equity approach. It is not widely used since the benefits of government service tend to be hard to measure, and because in many cases the benefit taxes would distort the consumption of government services.⁵

Efficiency

In general, taxes distort the price of goods and services and hence change economic incentives. For example, a tax on labor income (such as the personal income tax) decreases the returns that a person realizes for working, and arguably reduces work incentives. As a goal, tax systems should try to keep incentive distortions to a minimum. Generally, this means keeping tax rates both low and equalized across different portions of the tax base. In order to keep tax rates low while meeting governmental needs for revenues, it is also important to keep the tax base broad.

⁴ An exception is that some states have household property tax credits that are linked to income in ways that increase horizontal as well as vertical equity.

⁵ In particular, many government services have marginal costs far below average costs. In fact, that is one important reason for providing them as government services. Charging average costs, as in a private market, would cause a marked underconsumption of these goods.

The distorting effect of taxes depends on the *total* tax rate due to federal taxes as well as state and local taxes. Moreover, the effects of tax distortions are more than cumulative (i.e., they increase more than proportionately with the tax rate).⁶ Therefore it is advantageous for state and local governments to adopt revenue sources that are not heavily taxed at the federal level. At the federal level, the most heavily taxed revenue source is labor income (subject not only to income taxes, but also to the social security tax). This can provide a rationale for the reliance of states on taxation of retail sales and property, in that these tax bases are only lightly taxed by federal government.

Locational incentives and tax competition

Taxes are often specifically designed to influence economic behavior. Perhaps most importantly in recent years, state and local taxes on business are increasingly viewed as a significant factor in the locational decisions of firms. Therefore, there have been recurring efforts to lower taxes on firms, especially firms that are mobile across state lines. Because of continuing interstate competition in tax incentives, the average levels of state and local tax rates on “footloose” firms in the U.S. have declined rather steadily over the last 20 or 30 years. Consequently, these tax revenues have constituted a decreasing share of the state and local tax base.

Locational tax incentives are generally in conflict with revenue stability, horizontal and vertical equity, the benefit principle, and often with principles of efficient taxation—in other words, they conflict with almost every other major goal of taxation. For that reason tax incentives are controversial. It has often been pointed out that all states could make themselves better off by joining together and agreeing not to provide locational incentives, but no policy initiative along these lines has yet succeeded. It continues to be the case that incentives can serve to the advantage of particular states when they act separately to bring in new jobs and increase the tax base. Because no state believes it can afford to “unilaterally disarm,” incentives continue to be granted.

At the same time there is evidence that some states go too far—they disadvantage themselves and others by giving up too much.⁷ Chapter 8 of this report examines the question of whether Kansas taxes could be driving away business or lean too far the other way. The question does not depend on taxes alone—rather it depends on the entire cost of

⁶ At least in simplified economic models, the “excess burden of taxes” (a measure of the distorting effect) increases with the square of the marginal tax rate. For example, if a state tax is added on top of a pre-existing federal tax with equal tax rates, the excess burden is quadrupled.

⁷ See, e.g., Burress and Oslund [1998], Chapter 8.

doing business in each location. Therefore, Chapter 8 compares average general costs and taxes between states in the region for several types of business.⁸

Summary

The composition or structure of Kansas taxes at the state and local level is very similar to the average national structure. Kansas state government has a slightly higher than average reliance on the individual income tax, and a slightly lower than average reliance on miscellaneous other taxes and fees. Kansas has about average reliance on corporation taxes and provides about average levels of transfers to local government. At the local level, Kansas depends slightly more on both property taxes and sales taxes than does the nation as a whole.

The tax structure in Kansas is also similar to the average regional structure. At the same time, there is a substantial variation in tax structure among states in the six-state region. In fact, by some measures, Kansas has the most typical tax structure in the region.

States face a difficult challenge in designing tax systems that meet four criteria: that they reliably produce sufficient revenue for the finance of state and local government services; that they are perceived to be “fair” in their treatment of taxpayers at different income levels; that they do not seriously burden or distort economic transactions; and that they do not affect the interstate locational decisions of firms in a manner adverse to the interests of state citizens.

⁸ This report does not include non-tax locational incentives. These incentives can be important, but they are very complicated and go well beyond the scope of this study.

CHAPTER 2: INDIVIDUAL INCOME TAX

Introduction

Forty-three states and the District of Columbia impose a tax on the income received by households. In some states, local governments are also authorized to impose income taxes. All six states in the study region levy a state-level income tax; in addition local income taxes are found in Iowa and Missouri. But only in Missouri do local income taxes contribute a modestly significant amount of revenue (five percent to six percent of local tax revenue during 1996-1998).

State and local individual income taxes affect businesses in two ways. First, many businesses are organized as partnerships or sole proprietorships, and hence pay taxes at individual rather than corporate rates. Second, income taxes affect the business location decisions of corporate planners who are considering expansions or relocations. The taxes affect the cost of living for employees and managers. Individuals with high incomes may be reluctant to relocate to a high tax area unless their compensation increases. Because of these links between economic development and individual taxes, we discuss them in this chapter. However, these taxes are not part of the cost of business as usually defined and are not included in cost of business estimates in Chapter 8.

On average, individual income taxes have recently provided around a quarter of state plus local tax revenue, in Kansas as well as on average in five nearby states and in the U.S. (Figure 2-1). Within the region, the share ranged from about 21 percent (Nebraska) to 27 percent (Missouri).

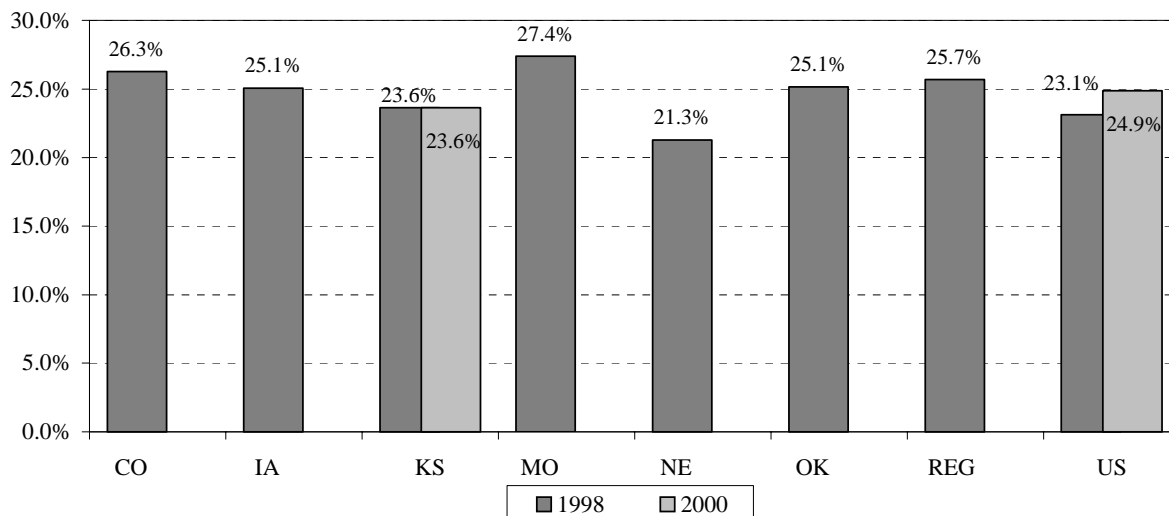
These shares have increased slowly but fairly steadily over time, up from around 18 percent two decades ago (Figure 2-2). Income taxes have also increased as a share of personal income, rising in Kansas over the last two decades from 1.8 percent to 2.6 percent (Figure 2-3). Regional and U.S. averages followed roughly the same path. Because the income tax is more progressive than other taxes, these trends have tended to make the net burden of state and local taxes less regressive.

For all states in this region, the individual income tax is the largest single source of state-level revenue. In Colorado over the last four years it has provided between 49 percent and 51 percent of state-level revenue. In Kansas and other regional states, it has usually provided between 36 percent and 41 percent of state-level revenue.⁹

⁹ Here and throughout, tax revenue data are available through year 2000 for Kansas and the U.S., but only through 1998 for the remainder of the region. See Appendix 1.

Figure 2-1:

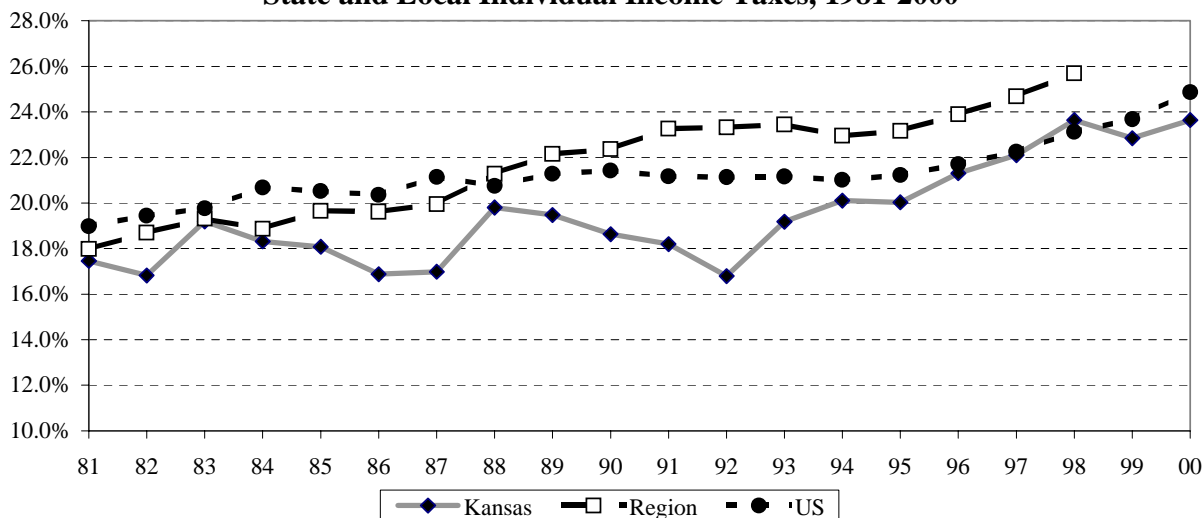
**Share of State and Local Tax Revenue Provided by
State and Local Individual Income Taxes, 1998 and 2000**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 2-2:

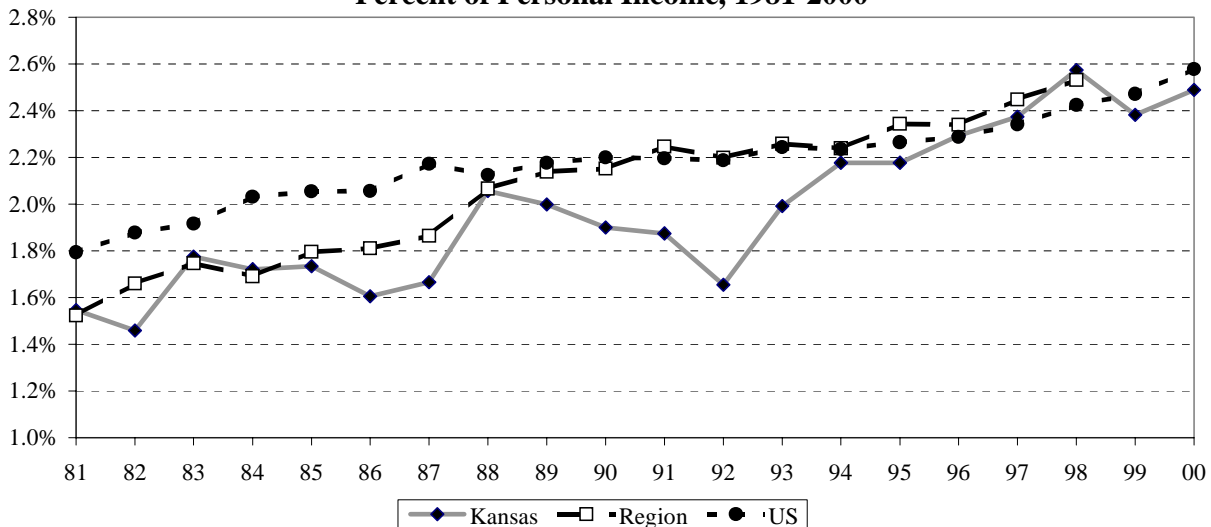
**Share of State and Local Tax Revenue Provided by
State and Local Individual Income Taxes, 1981-2000**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 2-3:

State and Local Individual Income Taxes as
Percent of Personal Income, 1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Description of Income Taxes

States differ widely in their income tax rate structures. These differences affect the degree of progressivity of the tax system—that is, the extent to which tax rates increase as income increases. All states in the region except Colorado implement progressive rate structures. In some states, the highest rate bracket starts at such a low level of income that most working families are subject to it. For example, the highest bracket for a married couple applies for incomes over \$9,000 in Missouri and for incomes over \$24,000 in Oklahoma (See Table 2-1). As a consequence, the tax is not very progressive in these states.

In other states, the highest bracket becomes effective only at higher income levels. Kansas rates reach the highest bracket for married taxpayers with incomes over \$60,000 and single taxpayers with incomes over \$30,000, the highest thresholds in the region. Consequently, the Kansas tax is fairly progressive.

In addition to the rate schedules, it is important to consider the various deductions, exemptions, and credits that each state allows. Where allowed, deductions for federal income taxes paid provide a substantial reduction in state taxable income. Nationally, nine states allow some form of federal tax deduction. Among the states covered by this study, Iowa allows a full deduction, Missouri allows a full deduction up to a maximum of \$10,000

Table 2-1
State Individual Income Tax Rates, Taxable Year 2001

State	Marginal tax rates: Number of			Top marginal rate begins at:			
	Lowest Tax Rate	Top Tax Rate	Brackets:	Single Bracket	Married Joint Bracket	Married Separate Bracket	Head of HH Bracket
Colorado*	4.63%	4.63%	Flat Rate	---	---	---	---
Iowa **	0.36%	8.98%	9	\$53,325	\$53,325	\$53,325	\$53,325
Kansas	3.50%	6.45%	3	\$30,000	\$60,000	\$30,000	\$30,000
Missouri ¹	1.50%	6.00%	10	\$9,000	\$9,000	\$9,000	\$9,000
Nebraska	2.51%	6.68%	4	\$26,500	\$46,750	\$23,375	\$35,000
Oklahoma	(with or without the optional deduction for federal tax):						
with	0.50%	10.00%	11	\$16,000	\$24,000	\$16,000	\$24,000
without	0.50%	6.75%	8	\$16,000	\$24,000	\$16,000	\$24,000

* Colorado rate reduced somewhat since 1999 tax year.

** Iowa bracket floors increased somewhat since 1999 tax year.

¹ The cities of Kansas City and St. Louis, Missouri impose an additional tax of 1% of earnings.

Sources: Information provided by state departments of revenue and finance (2000 personal income tax forms, instructions, and tax tables, 2001 estimated tax forms), state statutes, Russell [2001].

for married taxpayers filing a joint return. Oklahoma allows a deduction as an option. Kansas does not allow a deduction for federal taxes paid.

Most states allow standard or itemized deductions of various expenses and allow exemptions for taxpayers and their dependents. However, deductions and exemption amounts generally are *not* the same as under federal law. Deductions and exemptions can make a critical difference in the taxes that a typical family pays. For example, Kansas allows a married couple a standard deduction of \$6,000 and a personal exemption of \$2,250 per person (\$9,000 for a family of four). In contrast, Oklahoma allows a standard deduction of only \$2,000, plus a personal exemption of \$1,000 per person. (Table 2-2 summarizes some of these deductions and exemptions.)

Like the federal government, some states have an alternative minimum tax to recapture tax preference items that are considered excessive. Within the six state region, Colorado, Iowa, and Nebraska have minimum taxes. Kansas does not.

**Table 2-2:
State Standard and Itemized Deductions, Taxable Year 2001**

State	State Income Taxes	Itemized deductions:			Standard Deductions:			
		Federal Income Taxes	Charitable Contri- butions	Misc. Deductions	Single	Married- Joint	Married- Single	Head of Household
Colorado *	None	None	Federal	Federal	Federal	Federal	Federal	Federal
Iowa *	None	100%	State	State	\$1500	\$3700	\$1500	\$3700
Kansas	None	None	Federal	Federal	\$3000	\$6000	\$3000	\$4500
Missouri *	None	#\$5000 Single #\$10000 Joint	State	Federal	Federal	Federal	Federal	Federal
Nebraska *	None	None	Federal	Federal	Federal	Federal	Federal	Federal
Oklahoma *	(with or without the optional deduction for federal income tax):							
with	100%	100%	Federal	Federal	15%, min \$1000 max \$2000	15%, min \$1000 max \$2000	15%, min \$500 max \$1000	15%, min \$1000 max \$2000
without	100%	None	Federal	Federal	same	same	same	same
cf: Federal *	100%	None	Federal	Federal	\$4550	\$7600	\$3800	\$6650

In addition, all listed states use federal definitions for interest expense and medical deductions, and all states have various other deductions not available at the federal level.

* Federal deductions (affecting most states) and Iowa standard deductions have increased somewhat since the 1999 tax year.

Sources: Information provided by state departments of revenue and finance (2000 personal income tax forms, instructions, and tax tables, 2001 estimated tax forms), state statutes, Russell [2001].

Recent Developments

Several states in the region have cut their personal income tax rates in the last few years. Nebraska reduced its personal income tax rates in 1997 and increased its personal exemptions. Kansas completed a gradual decrease in rates for single taxpayers, bringing them in line with those faced by married taxpayers, with highest tax brackets uniformly at 6.45 percent. Oklahoma lowered the top marginal income tax rate from 7.00 percent to 6.75 percent starting in tax year 1999 (but higher rates apply if the federal tax deduction is selected). In the same year, Colorado lowered its income tax rate from 5.00 percent to 4.75 percent and increased the standard deduction for married couples. For tax year 2000 Colorado lowered its rate again very slightly to 4.63 percent and also added a special deduction to eliminate the “marriage penalty.” Iowa lowered all its income tax rates by 10 percent starting in 1998: the upper bracket rate fell from 9.98 percent to 8.98 percent. It has

**Table 2-3:
State Exemptions and Credits, Taxable Year 2001**

State	Exemption or Credit?	Single	Married- Joint	Married- Single	Head of Household	Elderly	Dependent	Blind
Colorado*	Exemption	Federal	Federal	Federal	Federal	Federal	Federal	Federal
Iowa	Credit	\$40	\$80	\$40	\$80	\$20	\$40	\$20
Kansas	Exemption	\$2,250	\$4,500	\$2,250	\$4,500	\$850	\$2,250	\$850
Missouri	Exemption	\$2,100	\$4,200	\$2,100	\$3,500	\$1,000	\$1,200	-0-
Nebraska *	Credit	\$94	\$188	\$94	\$94	-0-	\$94	-0-
Oklahoma	Exemption	\$1,000	\$2,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
cf:								
Federal *	Exemption	\$2,900	\$5,800	\$2,900	\$2,900	\$1,100	\$2,900	\$1,100
						M\$900		M\$900

* Federal and Nebraska exemptions have increased somewhat since 1999 tax year.

Sources: Information provided by state departments of revenue and finance (2000 personal income tax forms, instructions, and tax tables, 2001 estimated tax forms), state statutes, Russell [2001].

also gradually increased its standard deductions and the floors at which the various rates kick in. (Selected changes in tax law since our 1999 report are flagged with * or ** in the tables.)

Comparison of Income Taxes across States

The differences in state taxable income definitions, deductions, and credits present challenges for comparing state income tax systems. One possibility is to look at the tax situation faced by a representative family. To construct comparison measures, we focused on a family of four, consisting of a married couple with two dependent children, with federal adjusted gross income of \$60,000, all from wages and salaries.¹⁰ We filled out federal and state tax forms for the families, adjusting for recent changes in the income tax code in each state. The family was assumed to take the standard deductions to which it was entitled, including the deduction for federal taxes paid where applicable. However, our assumption was that the family did not claim any specially targeted deductions or credits (such as child care). Our hypothetical family had too much income to qualify for the general low-income credits offered in some states. The only credit the families could claim was Colorado's sales tax credit, because the availability of this credit does not depend on the taxpayers' income level.

¹⁰ Kansas figures for 1999 from the U.S. Bureau of the Census (2001a) estimate median income for a family of four at \$57,195.

We used our tax calculations to estimate effective average state tax rates for each state. We defined the effective average state tax rate as the state income tax liability divided by federal adjusted gross income. We found that the effective tax rates range from a low of 2.50 percent of adjusted gross income in Colorado to a high of 5.53 percent in Oklahoma. The Kansas effective rate, 4.02 percent, falls within the middle group of states. Kansas effective rates for the representative family are significantly lower than rates in the nearby states of Oklahoma and Missouri, significantly higher than Colorado and Nebraska, and about the same as Iowa (Table 2-4).

It should be noted that because of federal income tax effects, these tax rates significantly overstate the true economic effect of state taxes on these representative households. If the family itemizes its deductions on the federal income tax return, then it can deduct its state and local income taxes. This leads to a reduction in federal taxes which is referred to as a “federal offset.” Table 2-4 shows that the federal offset reduces the effective tax rates on the representative households in the region to between 2.12 percent and 4.70 percent.

The representative family approach provides a broad indicator of whether a state provides a high or low-taxed environment for individuals. However, some individual families in each state face very different tax environments. For example, families with child care expenses will be advantaged in states where these expenses trigger a tax credit. Families with an income much higher than the median income will be disadvantaged in states like Iowa, which levies high marginal tax rates for taxpayers in the upper tax brackets.

Another qualification of our results is that the level of income chosen for comparison, \$60,000, has not been adjusted for the differences in the cost of living across locations. A family receiving \$60,000 in Kansas may be considerably better off than a family receiving \$60,000 in Colorado, where average housing costs are much higher.¹¹ Cost of living differences within the states are even more extreme.

¹¹ National Association of Realtors, *Median Home Prices*. In 1998, the median prices of homes sold in cities in Kansas were: Kansas City-\$114,000; Wichita-\$89,300; Topeka-\$78,300. In contrast, the median prices of homes sold in Colorado were: Denver-\$152,200; Colorado Springs-\$138,500.

**Table 2-4:
Average Effective Individual Income Tax Rates, Taxable Year 2001
Hypothetical Household Earning \$60,000**

State	before federal offset ¹	after federal offset ¹
Colorado	2.50%	2.12%
Iowa	4.98%	4.23%
Kansas	4.02%	3.41%
Missouri ²	3.42%	2.91%
	plus local	plus local
Nebraska	3.11%	2.65%
Oklahoma (with or without the optional deduction for federal tax):		
with		
without ³	5.53%	4.70%

¹ Comparison rate is for a married couple with two dependent children, filing jointly, with federal adjusted gross income of \$60,000. Comparison rate = (state tax/federal adjusted gross income). See text for a definition of federal offset.

² The cities of Kansas City and St. Louis, Missouri impose an additional tax of 1% of earnings.

³ For the given comparison, the lowest tax is achieved without using the federal deduction.

Sources: Information provided by state departments of revenue and finance (2000 personal income tax forms, instructions, and tax tables, 2001 estimated tax forms), state statutes, Russell [2001]. Calculations by PRI.

Summary

Individual income taxes are a cornerstone of state finance. Nationwide, individual income taxes provide over one-third of total state and local tax revenue. Individual income taxes can affect economic development through their effect on corporate managers and key employees, and through their effect on non-corporate businesses.

In order to make valid comparisons of tax levels across states, it is important to design a measure that takes rates and brackets, exemptions, and deductions into account. One such measure is the effective tax rate paid by a representative household. The representative household used for this study consists of a married couple with two dependents and annual adjusted gross income of \$60,000. After accounting for the effects of the federal income tax, the effective rate at this income level ranges from a low of 2.12 percent in Colorado to a high of 4.70 percent in Oklahoma. Kansas falls in the middle at 3.41 percent.

CHAPTER 3: CORPORATE INCOME TAX

Introduction

Corporate income taxes are imposed in forty-four states (all states except Texas, Wyoming, Washington, South Dakota, Nevada, and Michigan). In recent years, the tax has contributed between 3.5 and 4 percent of state plus local tax revenues, both in Kansas and for the U.S. as a whole (Figure 3-1). In contrast, other states in the six state region have collected only 2.5 to 3 percent of tax revenues from corporate taxes.

Differences in the importance of the corporate income tax across states reflect many factors. The first factor is state tax rates. The second factor is the definition of the corporate tax base. Tax exemptions shrink the tax base and tend to lower tax collections. In addition, laws pertaining to the apportionment of income of multi-state firms affect the amount of taxable corporate income in a state. Third is the importance of the corporate sector in a state—that is, how important are corporations in contrast with other kinds of business organizations. Fourth is the profitability of the corporate sector. This depends on, among other things, how the industries in which a state has specialized fare during national upturns and downturns.

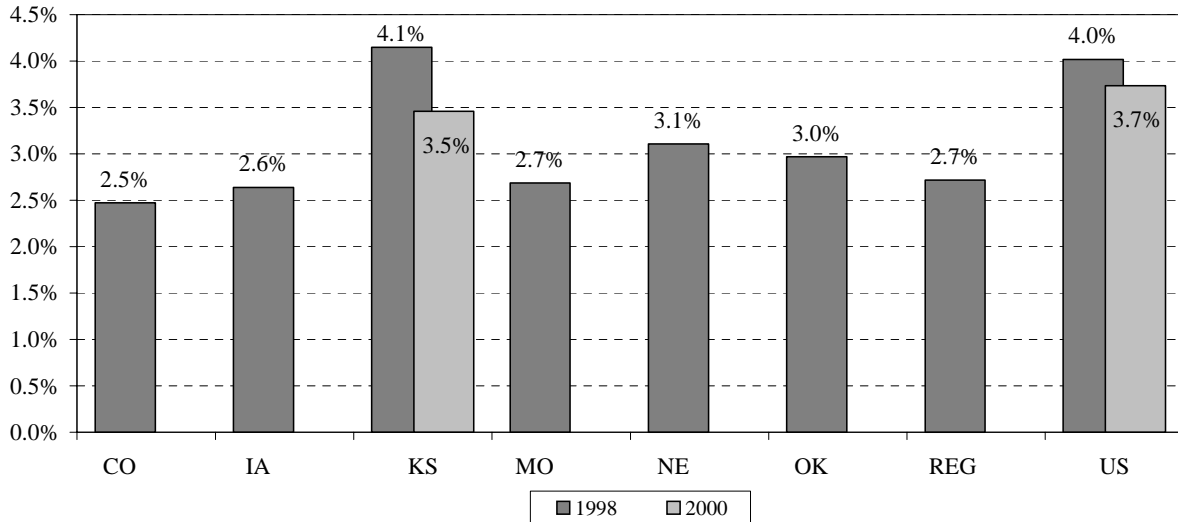
Over the last two decades in Kansas and the nation as a whole the corporation tax share of state and local revenue slowly declined from around six percent to a little under four percent (Figure 3-2). This happened partly because growth of economic development incentives reduced effective corporate tax rates, and partly because the growth of other types of taxes, especially sales and individual income, expanded total state and local collections. An offsetting factor was an ongoing increase in corporate income as a share of gross product. It follows that effective tax rates fell even faster than tax revenue shares fell.

Revenue shares in the rest of the region, while remaining consistently lower than Kansas and national averages, did not decline as much. Consequently, there has been some tendency for the rates to converge.

Corporate taxes as a share of personal income also declined over the last two decades. The Kansas share and the national average share both fell from about 5.5 percent to about 4 percent. The regional average fell roughly from three percent to two percent.

Figure 3-1:

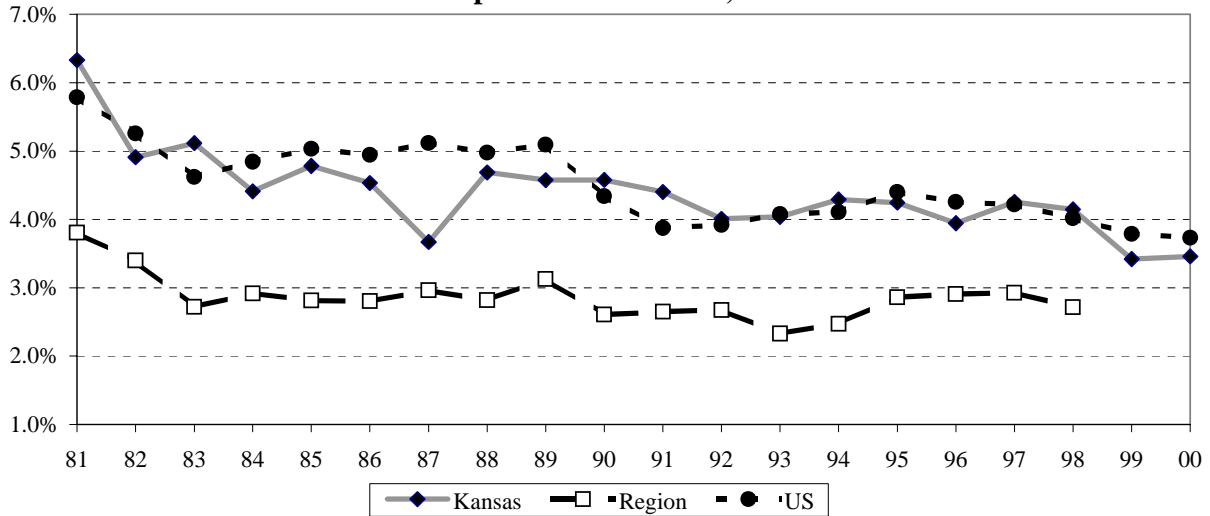
Share of State and Local Tax Revenue Provided by State Corporate Income Tax, 1998 and 2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 3-2:

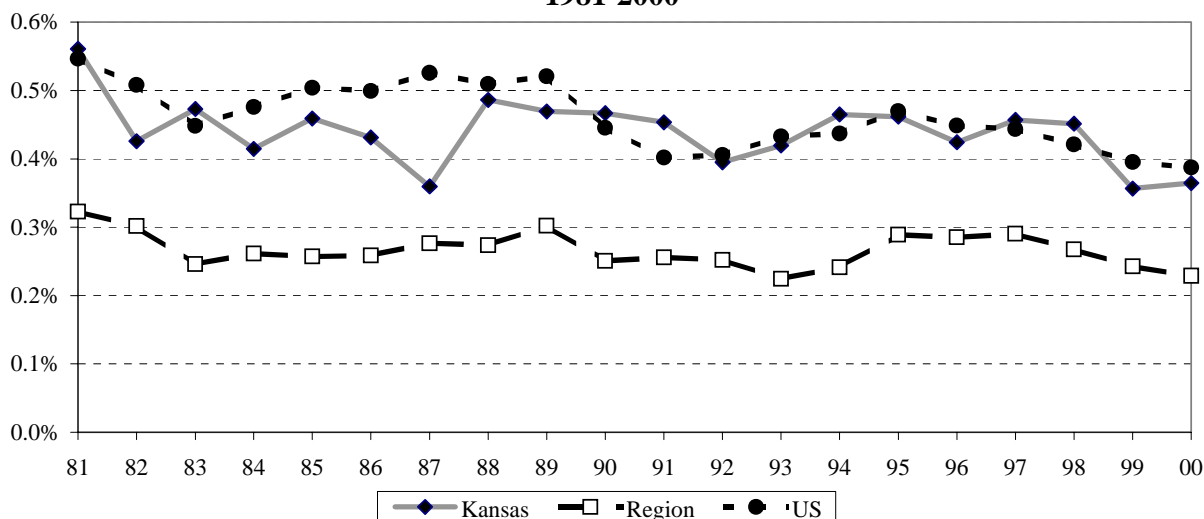
Share of State and Local Tax Revenue Provided by State Corporate Income Tax, 1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 3-3:

State Corporate Income Tax as Percent of Personal Income
1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Tax Rates

State corporate income tax rates in the U.S. typically range from four percent (sometimes just for the low tax bracket) to 10 percent. About two-thirds of the states that impose a corporate income tax impose a flat tax, while the remaining third have a graduated rate system. Within the region surrounding Kansas, statutory tax rates range from four to 12 percent (Table 3-1). On the low end, Kansas applies a rate of four percent to the first \$50,000 of income; on the high end, Iowa taxes corporate incomes over \$250,000 at 12 percent. However, these statutory rates can be misleading, as explained below.

Local governments also levy taxes on corporate income and related activities. Kansas City, Missouri and St. Louis, Missouri impose an additional income-based corporate tax on allocable income of one percent. St. Louis also imposes a one percent tax on employee gross compensation.

Factors Affecting Corporate Income Taxes

It is necessary to look at more than corporate tax rates to see how heavy a burden a state puts on corporate income. There are considerable variations across states in allowable deductions, income apportionment methods, income allocation methods, economic

**Table 3-1:
State Corporate Income Tax Rates,
Federal Deductibility, and Effective Tax Rates, Taxable Year 2001**

State	Bracket	Rate	Deductibility of Federal Income Tax	Marginal Gross Effective Rate ¹ (after state deduction for federal tax)	Marginal Net Effective Rate ² (after federal deduction for state tax)
Colorado*	Flat	4.63%	No	4.63%	3.01%
Iowa ³	First \$25,000	6%	50%	4.95%	3.25%
	Next \$75,000	8%	50%	6.60%	4.35%
	Next \$150,000	10%	50%	8.25%	5.46%
	Over \$250,000	12%	50%	9.90%	6.57%
Kansas	First \$50,000	4.0%	No	4.0%	2.60%
	Over \$50,000	7.35%	No	7.35%	4.78%
Missouri ⁴	Flat	6.25%	50%	5.16%	3.39%
Nebraska	First \$50,000	5.58%	No	5.58%	3.63%
	Over \$50,000	7.81%	No	7.81%	5.08%
Oklahoma	Flat	6%	No	6.00%	3.90%

* Rate reduced slightly since 1999.

¹ This calculation assumes a marginal federal tax rate of 35%.

Marginal gross effective rate = statutory rate x (1 - .35 x deductibility fraction).

² Marginal net effective rate = statutory rate x (1 - .35 x deductibility fraction) x (1 - .35) / (1 - .35 x statutory rate x deductibility factor).

These formulas ignore time lags. See text.

³ Iowa has an alternative minimum tax of 7.2% for certain tax preference items.

⁴ Additional tax of 1 percent of net profits in Kansas City and St. Louis.

Sources: Information provided by individual state departments of revenue and state statutes; calculations by PRI.

development incentives, and corporate income tax rebates, all of which affect a corporation's bottom line tax bill. We will examine each of these issues.

Federal Definitions and State Deductions

In general, state definitions of taxable income start with federal definitions. All of the states in our study follow federal depreciation rules and conform with the U.S. Internal Revenue Service code on expensing (single year deduction) of assets. Income after depreciation is then modified through additions and deductions.

Deduction for federal taxes

One major deduction is for federal taxes paid. Within the region surrounding Kansas, Missouri and Iowa each allow a deduction of 50 percent of federal taxes. The marginal federal rate on corporate income is currently 35 percent for firms in the highest bracket. So as an approximation, federal deductibility reduces a firm's state marginal tax rate by 35 percent times the percentage deductibility. The "Marginal Gross Effective Rate" column of Table 3-1 shows how this changes the effective tax rate.

Deduction of state taxes from federal income tax

At the same time, the state-level corporation tax is deductible from the federal corporation tax. This leads to a net reduction in the burden of the state tax, which is referred to the "federal offset." Similarly, all other state and local taxes are deductible from the federal corporation tax and have corresponding federal offsets. However the state corporation tax is noteworthy because its reciprocal deduction for federal taxes leads to complicated interaction effects.

Combined effects of cross-deductibility

The last column of Table 3-1 quantifies the impact of these cross deductions between state and federal corporation taxes.¹² In our region the statutory tax rates in the top brackets cover a fairly wide range, ranging from about 5 percent to 12 percent. Once all the effects of federal taxation have been accounted for, the marginal tax rates are much more homogeneous, with effective rates generally between 3 percent and 5 percent. Iowa's tax on corporate income over \$250,000 is somewhat higher, with a marginal effective rate of 6.57 percent.

¹² A static and simultaneous model is assumed. In reality, there are complicated lags between effects of state and federal taxes.

Other state deductions

The most important state deductions have to do with the allocation formula, discussed separately below. Some states have deductions that serve purposes more usually addressed by credits; we will discuss them along with other tax credits.

Division of Corporate Income

Perhaps the most challenging single issue in understanding corporate taxation is the division of income for firms that do business in several states or nations. Each state is limited to taxing the income that was actually generated in that state. However, the individual states exercise considerable freedom in deciding what income to claim as their own. Consequently, there is no assurance that exactly 100 percent of income (no more and no less) will be taxed overall by the states in which a firm operates. Depending on the firm's circumstances, multiple states may claim the right to tax the same income, while other income may go untaxed. Key concepts in the division of income include:

- Nexus. Does the state have the legal authority to tax the income of the firm?
- Unitary businesses. Should a group of corporate affiliates be treated like a single firm for the purposes of taxation?
- Apportionment. What kind of formula does the state apply to decide what share of income of the multi-state firm is taxable?
- Allocation. Can the state identify and claim specific income streams that belong to that state alone, and hence are not divided?

Nexus

Federal law guides the states in determining nexus. In particular, Federal Interstate Commerce Law defines two activities that, in and of themselves, *do not* give a state the right to impose the income tax. These activities include: a) the solicitation of orders for sales of goods in a state when those orders are approved and filled from a location outside the state, and b) the maintenance of an office by an independent contractor who makes sales or solicits orders for sales of goods. Court cases have further defined the operational meaning of nexus, in determining how much activity can take place within the state before the corporate income tax is triggered.

Unitary businesses

For all multi-state businesses, the question of income apportionment arises. The question is difficult enough when it arises in the context of a single firm. But often a group of corporate affiliates is involved. Then the question becomes whether the group of firms does business in such a way that the activities in the various states are interrelated. If so, the group of firms is a *unitary business* and may be treated by a state as if it were a single firm for the purposes of income apportionment.

**Table 3-2:
Example of Income Apportionment**

Factor	Amount in All States	Amount in Kansas	Share in Kansas
Sales	\$4,000,000	\$600,000	15.0%
Payroll	\$2,000,000	\$1,800,000	90.0%
Property	\$3,000,000	\$2,700,000	90.0%

In this example, UDITPA-type apportionment results in an overall allocation factor of $65\% = (15\% + 90\% + 90\%)/3$.

Source: PRI.

States show enormous differences in the way in which they treat the income of a unitary business. Among the states in our study, all except Iowa allow combined reporting (treating the entire group as a single entity), and most require it. Iowa requires that the affiliates that actually do business in the state file a consolidated return but does not allow their income to be “mixed” with income of other members of the group.

Apportionment

When a firm does business in several states, it is often difficult to say precisely where the firm’s income is earned. The firm may have its labor force in one state, own property in a second state, and sell to customers in yet a third state. Because of the difficulty in deciding exactly where income is earned, states rely on formulas based on percentages of in-state property, wages, and sales.

States may pass legislation to define apportionment formulas and sales definitions as they wish—there are no federal mandates. However, many states have voluntarily agreed to a set of standards known as UDITPA (Uniform Division of Income for Tax Purposes Act). UDITPA defines a formula based on evenly-weighted property, payroll, and sales factors, and provides clarification on how each factor should be calculated. The example in Table 3-2 shows a simple case of a UDITPA-type taxable income calculation for a multi-state firm in Kansas. The firm has most of its production facilities in Kansas, 90 percent of payroll and property, but only 15 percent of sales. Applying even weights of $1/3$ to each of the payroll, property, and sales factors results in an overall allocation factor of 65 percent; hence Kansas would tax 65 percent of the firm’s income.

Allocation

Allocated income of a multi-state firm is defined as that income assigned to one state rather than divided by an apportionment formula. UDITPA provides guidelines for income that should be allocated rather than apportioned: income such as rents and royalties from tangible personal property utilized in the state, capital gains and losses from real estate, and interest and dividends of firms that are incorporated in the state. Among the states in our study, Colorado, Iowa, Kansas, Missouri, and Oklahoma follow UDITPA or similar rules for allocation.

Uniformity and alternative apportionment rules

Rules for the division of income across states are far from uniform, despite UDITPA. Many states do not use UDITPA-type apportionment rules, and even those that do may offer an alternative formula. Within the region, four states use the equal weighted 3-factor formula in some but not all situations, while Iowa and Nebraska do not. The states are split evenly with respect to use of UDITPA definitions of factors; Kansas does use UDITPA definitions (Table 3-3). States also differ with respect to “throwback” rules, i.e., treatment of income from states without a corporation income tax in apportionment formulas (see, for example, the columns in Table 3-3 on sales of goods shipped in- and out-of-state). Because of differences in apportionment formulas and in the definitions that states use in calculating what goes into the formulas, “non-taxed and double-taxed sales are almost inevitable” [Vandenbush and Worcester, 1990].

Most of the alternatives to UDITPA that have been adopted in the states weigh sales or receipts more heavily than other factors. A state with a heavily-weighted sales factor will provide a locational advantage to firms that sell most of their products out-of-state (Mazerov [2001]).¹³ Take, for example, a firm that concentrates the bulk of its payroll and property in a single state, but that sells to a national market (mostly out-of-state). The higher the weight that the state places on sales the lower will be the firm’s overall in-state apportionment, and the lower its taxable income in the state. Of course, the firm will still be liable for taxes in other states, but these are largely independent of what goes on in the state where the firm has its production facilities.¹⁴ Table 3-4 contrasts the percentage of income taxable in a state under the two alternative apportionment formulas used in Kansas –one with a sales factor of 1/3 and one with a sales factor of 1/2.

¹³ For a sale to be designated as “out-of-state,” a physical product must generally be shipped to an out-of-state customer. Services provided by in-state employees are generally considered as in-state sales. For example, work done by a lawyer in Kansas for an out-of-state client is still an in-state sale.

¹⁴ This argument depends on the existence of differences in state tax systems. If other states in which the firm does business are using a three-factor formula, the state with a heavily weighted sales factor provides an advantage for the location of payroll and capital.

**Table 3-3:
Allocation Methods for Income of Multi-State Firms, Taxable Year 2001**

State	Choice of formulas	Factor weights			Substantially UDITPA	Includes sales shipped:		Qualifications
		Revenue or sales	Property	Payroll		In	Out	
Colorado ¹	yes	1/3	1/3	1/3	yes	100%	0%	
		1/2	1/2		yes	100%	0%	
Iowa	no	1			no	100%	0%	
Kansas	some-times	1/3	1/3	1/3	yes	100%	²	
		1/2	1/2		yes	100%	²	Payroll factor > property factor + sales factor
		1			yes	100%	²	Payroll > \$20M In county impacted by State hospital closing
Missouri	yes	1/3	1/3	1/3	yes	100%	²	
		1			yes	50%	50%	
Nebraska	no	1			no	100%	²	
Oklahoma	some-times	1/3	1/3	1/3	no	100%	²	
		1/2	1/4	1/4	no	100%	²	Investment > \$200 M

¹ For companies with no other Colorado activity except sales, with no owned or rented real estate in Colorado, and with gross sales under \$100,000, an alternative is to pay 0.5 percent of gross receipts on sales in Colorado.

² 100 percent of shipments from the state to locations without a corporate income tax, 0 percent if to other locations.

Sources: Information provided by individual state departments of revenue and state statutes.

**Table 3-4:
Income Apportionment under Alternative Formulas**

Factor	Amount of Factor in All States	Amount of Factor in Kansas	Share in Kansas	Contribution Under Formula 1	Contribution Under Formula 2
Sales	\$4,000,000	\$600,000	15.0%	5.0%	7.5%
Payroll	\$2,000,000	\$1,800,000	90.0%	30.0%	45.0%
Property	\$3,000,000	\$1,800,000	60.0%	<u>20.0%</u>	<u>0%</u>
Kansas Taxable Income %				55.0%	52.5%
Formula 1: $1/3 * \text{sales share} + 1/3 * \text{payroll share} + 1/3 * \text{property share}$					
Formula 2: $1/2 * \text{sales share} + 1/2 * \text{payroll share}$					

Source: PRI.

Kansas started to move away from the exclusive use of a UDITPA-type formula in 1988. At that time, the state offered a new option by which a taxpayer could choose to drop payroll from the apportionment formula. The option remains open to taxpayers for whom the payroll factor is at least twice the average of the property and sales factors. In 1996, the state began to offer a very limited sales-only apportionment option. Firms with payrolls exceeding \$20 million, and which locate in counties that have been certified as sustaining negative impacts from state hospital closure, qualify for a 10-year period.

Income Tax-Based Economic Development Incentives

The states in the region surrounding Kansas take an active role in trying to encourage new and expanding businesses. Some states have used tax incentives aggressively to recruit jobs and investment from out-of-state, while other states, including Kansas, have provided for moderate tax incentives to "level the playing field" rather than as a leading economic development strategy.

Types of incentives

Income tax incentives generally fall into one of four categories: research and development incentives; rebates of property taxes paid, job and investment credits; and enterprise zone incentives. The specific programs and policies of each state are presented in detail below.

Research incentives

Within the region, Colorado, Kansas, Iowa, and Missouri all offer income tax credits based on research and development expenditures (see Table 3-5).¹⁵ In 1988, Colorado legislated tax credits for R&D expenditures made within enterprise zones. The law limits the credit to three percent of the amount by which research and development spending increases over its previous average. Kansas also focuses on the expansion of research and development activities, granting a credit of 6.5 percent of increased expenditures. Iowa allows a 6.5 percent credit on increased spending on qualified research activities; the credit increases to 13 percent in enterprise zones. Credits in excess of a firm's tax liability are refundable. Missouri's research credit stands at 6.5 percent of increases in research expenditures.

Rebates of property taxes

Property taxes on business assets, particularly machinery and equipment, are sometimes thought to discourage investment in a state. At the same time, property taxes on businesses form an important part of the local property tax base. Two states in the region, Kansas and Colorado, offer property tax rebates through income tax credits. Such credits leave the local tax base untouched.

Kansas offers a credit against personal and corporate income tax in the amount of 15 percent of the property tax paid on industrial machinery and equipment. If the amount of the credit exceeds the taxpayer's income tax liability, the taxpayer is entitled to a refund for the amount in excess of the taxpayer's income tax liability.

In 1999, Colorado established a credit against personal and corporate income tax based on taxes paid on business personal property (not real estate). The credit, however, is only effective if the total amount of state revenues exceeds Colorado's constitutional state spending limit by at least \$170 million. In other words, the rebate is a means of distributing any state budget surplus. If revenues sufficiently exceed expenditures, corporate and individual taxpayers in Colorado will receive a credit against their income taxes for the lesser of \$500 or the total amount of personal property tax paid in the fiscal year for which the credit is claimed. If a taxpayer paid more than \$500 in personal property tax for the year in which the credit is claimed, an additional credit of 13.37 percent will be applied to the amount of property tax paid in excess of \$500.

¹⁵ Although Nebraska does not specifically credit R&D expenditures, like most other states it does include research and development activities among the list of industries covered by other incentives. Nebraska grants incentives for research and development under its Employment and Investment Growth Act. Benefits include sales tax refunds and income tax credits for jobs and investment (see Table 3-6).

**Table 3-5:
Research and Development Tax Credits, Taxable Year 2001**

State/ program	Rate	Basis	Limitations/ carryover¹	Eligibility requirements
Colorado				
<i>Research and Development Credit</i>	3%	Excess over average R&D for two previous years.	Credits earned this year become available in equal parts spread over 4 years.	Enterprise zone.
Iowa				
<i>Basic Research Activities Credit</i>	6.5%	Excess over R&D for previous year.	Refundable 7 year carryforward.	All Iowa.
<i>Research Activities Credit under New Jobs and Income Program</i>	6.5% (additional)	As above.	As above.	Participation in New Jobs and Income program (see Table 3-6)
<i>Research Activities Credit</i>	13%	R&D	Fully refundable.	Enterprise zone. Same conditions as E.Z. credits (see Table 3-7)
Kansas				
<i>Research and Development Credit</i>	6.5%	Excess over average R&D this year plus two previous years.	Credits earned this year become available in equal parts over 4 years. Unlimited carryforward.	All Kansas.
Missouri				
<i>Research Expenses</i>	6.5%	Excess over average R&D for three previous years.	5 year carryforward Limited to 2/3 of total R&D in three previous years.	All Missouri.
Nebraska				
	No R&D credit as such.			
Oklahoma				
<i>Credit for New Job in Computer, Research, and Development Businesses</i>	\$500	Per new job paying \$35,000	Not available with Quality Jobs Program or Small Employer Quality Jobs Incentive. Maximum \$25,000 per year. Annually for 5 years.	Includes EDP and R&D. Expires 2003.

¹ R&D also eligible for conventional and enterprise zone investment credits in all states. See Tables 3-6 and 3-7.

Abbreviations: M&E means investment in machinery and equipment.

R&D means investment in research and development.

EDP means electronic data processing.

E.Z. means enterprise zone.

Sources: Information provided by individual state departments of revenue, state statutes, and Commerce Clearing House [2001].

In 2000, Oklahoma created a tax credit which equals the amount of local property taxes abated for qualifying investments in real property and attached improvements in enterprise zones (effectively doubling the abatement by local governments). There is a 10 year carryover. There is a limited state-wide pool of \$200,000 available for this purpose.

Most states also have property tax rebate and exemption programs for investment that are not directly tied to the corporate income tax. These programs are discussed in Chapter 5.

Job and investment credits; enterprise zones

Job and investment credits are the most important state credits. All of the states in the region offer job and investment credits in some form, both to attract new industries and, in some cases, to encourage the expansion of established firms (Tables 3-6 and 3-7). The amount of credit that a firm receives depends directly on the amount of new or expanded activity it undertakes in the state. In many states, credits may be claimed for several years, provided that a firm keeps its new employees and investment in place.

Job and investment credits vary widely from state to state. The programs can be analyzed along the following dimensions:

1. Do the credits target specific types of jobs, particularly those paying high wages?
2. Do the credits target specific industries such as manufacturing?
3. Do the criteria by which a firm qualifies for credits emphasize jobs, investment, or a mixture of the two?
4. Are the credits provided for both new and established firms, or are they targeted to new firms only?
5. Are the credits limited to enterprise zones and other specified geographic areas? There is one key difference between enterprise zone programs and other economic development programs: enterprise zones attempt to stimulate development in limited geographic areas and to bring jobs and investment to declining or disadvantaged regions.

Our discussion will provide a description of job and investment credits in Kansas and in selected other states in order to illustrate the range of incentive programs (details for all six states in the study region are found in Tables 3-6 and 3-7). Our analysis focuses on the five dimensions defined above.

Some of these credits are linked both to new jobs or investment and also to workforce training. Most states have other workforce training incentives that are not specifically linked to the income tax. Those incentives will not be described in this report.

Table 3-6:
New Job, Training, and Investment Tax Credits, Taxable Year 2001
(See also Table 3-5 for R&D and Table 3-7 for Enterprise Zones.)

State/program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements
Colorado ²				
<i>New Investment Tax Credit</i>	1%	Investment	\$1,000 per year. 3 year carry forward	All industries
<i>School-to-Career program</i>	10%	Internship costs to employer	5 year carryforward	Certified school-to-career program
Iowa ³				
<i>New Jobs Credit</i>	6%	Wages of new employees subject to unemployment insurance tax	10 year carryforward	All industries. Must enter into a job training agreement with an area community college New or significantly expanded business.
<i>Supplemental New Jobs Credit</i>	1.5%	Payroll	7 year carryforward	As above. Wages greater than county or regional average.
	1.5% additional	Payroll	7 year carryforward	As above. Participation in New Jobs Training Program.
<i>Investment Credit under New Jobs and Income Program</i>	10%	Investment in M&E, real property and buildings	Recapture if investment sold within 5 years 7 year carryforward	All industries except retailing 1) obtain community approval 2) start-up or expansion 3) not an in-state relocation 4) pays 80% of health insurance 5) median wage \$ about \$13 per hour and 130% of average county 6) investment \$ about \$12 million 7) 50 new FTE jobs for 5 yrs 8) satisfy 3 of the following: a) pension plan or profit-sharing b) high value-added goods or services c) provide day-care d) R&D \$ 1% of pretax profits e) worker training \$ 1% of pretax profits f) productivity and safety improvement program g) reuse 20,000 sq. ft. of vacant space
<i>Industrial New Jobs Training program</i>	6%	Wages of new jobs during first year	Training costs	Manufacturing, assembly, R&D, interstate services except health, retail, professional. First \$15,700 of wages

**Table 3-6:
New Job, Training, and Investment Tax Credits, Taxable Year 2001**
(See also Table 3-5 for R&D and Table 3-7 for Enterprise Zones.)

State/program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements
Kansas				
<i>Income Tax Credits</i>	\$1,500	Per new job (See also Table 3-7)	\$50,000 per year for all credits. 50% of tax liability Unlimited carryforward if jobs are maintained.	Financial institutions and headquarters with \$ 20 new jobs Manufacturer, \$ 2 new jobs Non manufacturer, \$ 5 new jobs Retail, \$20 new jobs, cities < 2,500 pop
As above.	1%	Investment	As above.	As above.
<i>Job Expansion and Investment</i>	\$100	Per new job per year	50% of tax liability No carryforward. Annually for 10 years. Not available with other investment credits	Most industries qualify. Firms must add 2 jobs.
As above.	0.1%	Investment	As above.	As above.
<i>High Performance Incentives Program</i>	10%	Investment less \$50,000	10 year carryforward. Not available with other investment credits	Industry: manufacturing, state-export-oriented service firm, or the headquarters or back office of a national or multi-national firm. Above-average wages for comparable firms in the county.
	10%	Training expenses less 2% of payroll	\$50,000 per year 10 year carryover	As above. Participation in qualified training program
Missouri				
<i>New or Expanded Business Facilities</i>	\$75 (new firm) \$100 (expanding firm) \$150 (distressed community)	Per new job per year	Annually for 10 years. Resalable.	Manufacturing; wholesaling; warehousing; mining; R&D; inter-exchange telecommunications facilities; office headquarters; agriculture; ag implement dealers; recycling; at least 25 new jobs. other business: at least 2 new jobs. \$100,000 minimum investment
	0.075% (new firm) 0.1% (expanding firm) 0.15% (distressed community)	Investment	As above.	As above. Investment units of \$100,000

Table 3-6:
New Job, Training, and Investment Tax Credits, Taxable Year 2001
(See also Table 3-5 for R&D and Table 3-7 for Enterprise Zones.)

State/program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements
Nebraska				
<i>Employment Expansion and Investment Incentive Act</i> (See also Table 3-7)	\$1,500	Per new job	50% of tax liability. 5 year carryforward.	Industries: R&D, data processing, telecommunications, finance, manufacturing, warehousing, transportation, wholesale trade, administration, livestock feeding, farming, ranching, medicine. Excludes restaurants, contractors and repair persons, and most retailing firms New jobs \$ 2 Investment \$ \$75,000.
	1.33%	Investment	As above.	As above. Investment units of \$75,000
<i>Employment and Investment Growth Act</i>	5%	Payroll of new employees	15 year carryforward. Annually for 7 years. Credits can be applied to tax liability or to refund sales and use tax on investment.	Industries: same as above, except livestock feeding and farming. Investment \$ \$3M New jobs \$ 30
	10%	Investment	As above.	As above.
<i>Wage Benefit and Investment Tax Credit</i> (was: <i>Quality Jobs Tax Credit</i>)*	5%	Increased payroll paying 100%, 110%, or 120% of Nebraska average annual wage (depending on investment)	Available for 10 years. 8 year carryover. \$5,000 application fee. Credit is spent on training, benefits, or safety. Recapture rules apply.	Industries: produce, warehouse, or process tangible personal property, conduct R&D for science, ag., or industry, or produce data processing, telecom, insurance, or administration of the above. Either: (1) Investment \$ \$10M, new jobs \$ 25, and county pop # 100,000; (2) Investment \$ \$50M, new jobs \$ 500; (3) Investment \$ \$100M, new jobs \$ 250; or (4) Investment \$ \$200M, new jobs \$50. Average wage > \$40,000
	4%	As above.	As above.	Same as above, except \$40,000 \$ average wage > \$30,000
	3%	As above.	As above.	Same as above, except \$30,000 \$ average wage > \$20,000. (No credit below \$20,000)
	15%	Investment	As above. Not available with payroll credits	Same industries as above. investment \$ \$200M and new jobs \$ 500

Table 3-6:
New Job, Training, and Investment Tax Credits, Taxable Year 2001
(See also Table 3-5 for R&D and Table 3-7 for Enterprise Zones.)

State/program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements
<i>Rural Economic Opportunities Credit *</i> (no new projects after 2004)	10%	Investment	Partial recapture if goals not met. \$ 9 year carryforward. Not available with other investment credits except immediately below.	Most industries qualify New employees \$.5% local work force Average wage \$ 125% of county and 100% of region Total investment \$ (amount that depends on county employment) Rural counties.
	5%	Increased payroll (formula)	Partial recapture if goals not met. Annually for 6 years. # 9 year carryforward. Not available with other investment credits except immediately above.	As above.
Oklahoma				
<i>Basic Investment/New Jobs Credit</i>	1%	M&E, buildings, improvements	Annually 4 years for a total of 4%. 15 year carryover Not available with most other investment credits	Industries: manufacturing, processing or aircraft maintenance \$ 50,000 investment.
	\$500	Per new job paying > \$7,000/year	Annually for 4 years for a total of \$2,000. 15 year carryover Not available with previous credit or most other investment credits	As above.
<i>Investment/New Jobs Credit Requiring \$40 Million Investment</i>	2%	M&E, buildings, improvements	Annually for 4 years for a total of 8%. 15 year carryover Not available with most other investment credits	Manufacturing. At least \$40 million investment.
	\$1,000	Per new job paying > \$7,000/year	Annually for 4 years for a total of \$4,000. 15 year carryover Not available with previous credit or most other investment credits	As above.

**Table 3-6:
New Job, Training, and Investment Tax Credits, Taxable Year 2001**
(See also Table 3-5 for R&D and Table 3-7 for Enterprise Zones.)

State/program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements
<i>Oklahoma Quality Jobs Act and Saving Oklahoma Jobs Act (1994) - Incentive Payments for Jobs *</i>	5% (6% for defense contracts)	New or at-risk payroll	Not available with most other investment credits Annually for 10 years.	Industries: manufacturing, central and administrative offices, research and development labs. Also, warehousing and selected business service industries (if exports from state \$ 75% of product) Must offer basic health care coverage. New payroll \$ \$2.5 million 80% of employees work \$ 25hours/week Average wage \$ \$0 or \$18,720 or \$22,500 or \$26,000 depending on county and year. Alternative conditions available for food products and R&D and Superfund sites.
<i>Above, for High Impact Projects</i>	2.5%.	New or at-risk payroll	As above, except annually for 6 years +	Same industries as above. \$ 1% of the county labor force \$2.5 million \$ new payroll \$ \$1 million
<i>Above, with Additional Premium Payment for Saving Quality Jobs</i>	up to 5%	New or at risk payroll	As above, except annually for 3 years total payroll credits may not exceed 5%	As above, also 1 new job per job saved.
<i>Small Employer Quality Jobs Act (1997)</i>	5%	New payroll	Not available with other incentive credits Annually for 5 years	\$ 10 new employees. # 90 total employees. Health benefits. 80% of payroll must exceed 150% of average county wage, or opportunity zone. Exports from state \$ 75% of product

* Benefits increased or conditions liberalized since 1999.

¹ Except as noted, credits are one time only and are not refundable, but do carry over.

² Colorado dropped its credit of \$50 per new employee.

³ Iowa carryovers are further restricted by requiring that the credits with most generous carryovers be applied first.

Abbreviations: M&E means investment in machinery and equipment.

R&D means investment in research and development

Sources: Information provided by individual state departments of revenue, state statutes, and Commerce Clearing House [2001].

Table 3-7**New Job, Training, and Investment Tax Credits in Enterprise Zones, Taxable Year 2001**

(See also Table 3-5 for R&D credits in enterprise zones)

State/ Program	Rate	Basis	Limitations/carryover¹	Eligibility Requirements²
Colorado				
<i>E.Z. Investment Tax Credit</i>	3%	M&E and R&D	100% of liability up to \$5,000 plus 25% of tax liability above \$5,000. 12 year carryforward. 3 year carryback.	Not a relocation unless expanded.
<i>E.Z. New Business Facility Employee Credits</i>	\$500	Per job per year	5 year carryforward.	New facility or major expansion.
<i>As above - health insurance credit</i>	\$200 (additional credit)	Per job per year	As above.	New facility or major expansion. Employees covered by health insurance plan. Only during the first 2 years in the zone.
<i>As above- agricultural processing facility</i>	\$500 (additional credit)	Per new job	As above.	New facility or major expansion. Industry: processing agricultural products.
<i>Job Training Investment Credit</i>	10%	Training costs for new jobs, including investments	12 year carryforward.	
Iowa **				
<i>Investment Tax Credit</i>	10%	Real and personal property except land and intangibles	20 year carryforward.	All industries except retailing: 1) obtain community approval 2) start-up or expansion 3) not an in-state relocation 4) pays 80% of health insurance 5) median wage exceeds \$7.50 per hour and 90% of county or regional average 6) investment of at least \$.5 million 7) 10 new FTE jobs for 5 yrs
<i>Supplemental New Jobs Training Credit</i>	1.5% (additional credit)	New wages	Training costs	As above. See Table 3-6 for New Jobs Training Credit.

Table 3-7
New Job, Training, and Investment Tax Credits in Enterprise Zones, Taxable Year 2001
(See also Table 3-5 for R&D credits in enterprise zones)

State/ Program	Rate	Basis	Limitations/carryover¹	Eligibility Requirements²
Kansas				
<i>Income Tax Credits</i>	\$2,500 (cf. \$1,500 in metro areas)	Per new job	Maximum \$50,000 for all credits. Maximum 50% of income tax. Unlimited carryover if jobs are maintained.	All nonmetro areas. Financial institutions and headquarters with \$ 20 new jobs Manufacturer, \$ 2 new jobs Non manufacturer, \$ 5 new jobs Retail, \$ 20 jobs in cities # 2,500 pop.
Missouri				
	\$400	Per new job per year	Available annually for 10 years. Not available with conventional new or expanded business credit. Partially refundable. 15 to 22 year carryover (from date of qualification)	New or substantially expanded business. 30% of firm employees must be zone residents or meet at least one of : (a) difficult to employ (b) unemployed at least 3 months after end of unemployment benefits (c) eligible for AFDC or relief.
	10%	First \$100,000 investment	As above.	As above.
	5%	Next \$90,000 investment	As above.	As above.
	2%	Investment over \$100,000		
(Not a credit)	50%	of taxable income in zone is exempt from Missouri income tax	As above.	As above.
	\$400	Per job per year	As above.	Employee must be zone resident or difficult to employ (meets one of (a) to (c) above)
	\$400	Per employee trained	As above.	As above.

Table 3-7
New Job, Training, and Investment Tax Credits in Enterprise Zones, Taxable Year 2001
(See also Table 3-5 for R&D credits in enterprise zones)

State/ Program	Rate	Basis	Limitations/carryover¹	Eligibility Requirements²
Nebraska				
<i>Income and Sales and Use Credits</i>	\$4,500	Per new job for zone resident	Maximum \$75,000 total/year Credits can be applied to sales and use tax refund. Not available with other programs. 5 year carryover.	Industries: same as for non-zone incentive (See Table 3-6). Investment \$ \$75,000 New jobs \$ 2
	\$3,000	Per new job for non- resident	As above.	As above; \$ 50% of employees are residents
	\$1,500	Per new job for non- resident	As above.	As above; < 50% of employees are residents
	4%	Investment	As above.	As above; \$ 50% of employees are residents Investment units of \$75,000
	1.33%	Investment	As above.	As above; < 50% of employees are residents Investment units of \$75,000

Table 3-7
New Job, Training, and Investment Tax Credits in Enterprise Zones, Taxable Year 2001
(See also Table 3-5 for R&D credits in enterprise zones)

State/ Program	Rate	Basis	Limitations/carryover ¹	Eligibility Requirements ²
Oklahoma				
<i>Investment/ New Jobs Credit for E.Z.</i>	2.5%*	M&E, buildings, improvements	Can be claimed 4 years for a total of 10%. 15 year carryover. Not available with most other investment credits.	Industries: manufacturing, processing or aircraft maintenance; \$50,000 investment.
	\$1,000	Per new job per year	Can be claimed 4 years for a total of \$4000. 15 year carryover. Not available with most other job credits.	Same industries as above. Minimum salary must be at least \$7,000 Computer services and R&D firms may also claim the job credit for up to 50 new employees, provided the salaries of those employees are at least \$35,000 (see Table 3-5).
	5%*	M&E, buildings, improvements	Can be claimed 4 years for a total of 20%. 15 year carryover. Not available with most other investment credits.	Same industries as above. At least \$40 M investment.
	\$2,000	Per new job	Can be claimed 4 years for a total of \$8000. 15 year carryover. Not available with most other job credits.	Same industries as above. At least \$40 M investment. Minimum salary must be at least \$7,000 .

¹ Except as noted, credits are one-time only and are not refundable, but do carry over.

² Except as noted, both investment and jobs must be in the enterprise zone.

Abbreviations: E.Z. means enterprise zone.

M&E means investment in machinery and equipment.

R&D means investment in research and development.

* New or liberalized since 1999

** Iowa has removed enterprise zone requirement for Supplemental New Jobs Credit.

Sources: Information provided by individual state departments of revenue, state statutes, and Commerce Clearing House [2001]

State programs

Kansas. Kansas offers three alternative job and investment incentive programs. The first has been in existence since the late 1970s and offers a credit of \$100 per employee and \$100 per each \$100,000 investment. The credit may be taken in each of 10 consecutive years in which employment levels are maintained.

The second program offers a one-time \$1,500 for each job created, with an increased credit of \$2,500 in non-metro areas. In addition, firms are offered \$1,000 for each \$100,000 of new investment. Manufacturing industries must add two new employees to qualify, while non-manufacturing firms other than retail must add five employees. Most industries are eligible under this legislation. Retail firms qualify only if they add two jobs and locate or expand in a city with a population of 2,500 or less. Headquarters and back-office establishments that meet a threshold of 20 new jobs qualify for incentives, regardless of their business classification. Legislation passed in 1996 extended this program to businesses (insurance and banking) that pay privilege taxes rather than the corporate income tax.

This program emphasizes job creation in the sense that no credits are granted for investment unless job creation takes place simultaneously. However, firms that add a few jobs and undertake a large investment still qualify for credits on the full investment amount. There is no specific targeting of this program toward particular types of jobs, and only minimal targeting (in terms of differential thresholds) in terms of industries. The legislation targets rural development by increasing credit amounts in such areas. But unlike traditional enterprise zone legislation (which this replaces), the Kansas incentive defines the targeted geographic area very broadly.

A third Kansas incentive program offers incentives for Kansas “high performance” firms. Such firms are eligible to receive a 10 percent investment credit for investments over \$50,000, a workforce training credit on training expenses exceeding two percent of payroll, and matching grants for consulting services provided by the Mid- America Manufacturing Technology Center or other approved consultants. To qualify for incentives, firms must meet one of two wage criteria: they must pay wages that are above the industry average for the county (or region) in which they locate, or they must pay wages at least 1.5 times the statewide average for all industries. This, along with the training and engineering-consulting grants, directs the program at firms that produce high-quality jobs. To be eligible for credits, a firm must be a Kansas manufacturer, a supplier to Kansas manufacturers, an export-oriented service firm, or the headquarters or back-office establishment of a national or multi-national firm; hence the credit is targeted toward industries that comprise the Kansas “export base.” Firms may receive the credit without actually adding to their workforce. This incentive encourages firms to add capital as a means of enhancing productivity.

Missouri. Missouri offers two major job and investment credit programs—a program for firms located anywhere in the state, and an expanded program for firms in enterprise zones. Under the general credit program, Missouri offers small annual credits for new and expanding firms and extends the credits for up to ten years. Credits are based on the amount of new investment and the number of new jobs. Credits are targeted at basic industries (manufacturing, wholesaling and warehousing, mining, R&D, and inter-exchange telecommunications facilities). Firms in these industries must add two jobs and \$100,000 investment, or invest \$500,000 with no job requirement in order to qualify. Office facilities also qualify, but with a higher jobs threshold.

Missouri also makes extensive use of enterprise zones. Within the zones, job and investment credits are several times greater than in other areas of the state. To qualify for enterprise zone credits, a business must create at least two new jobs and spend \$100,000 on new investment (\$1 million for replacement facilities) at the project site. Firms in almost all industries may qualify.

Job credits begin at \$400 per job per year, and can rise as high as \$1,200 based on whether the employee is a resident of the enterprise zone, and whether the employee is classified as difficult to employ. Missouri encourages job training in enterprise zones by offering a one-time job training credit of up to \$400 per job. Missouri job credits extend over 10 years. For the first two years that credits are earned, firms may receive partial refunds for any credits that exceed the firm's tax liability from its new or expanded facility.

In addition, Missouri offers additional tax credits for firms that hire at least 30 percent of new employees from special categories defined as "hard to employ." For such firms, 50 percent of taxable income attributed to the enterprise zone is exempt from the Missouri income tax.

Credits for investment in Missouri enterprise zones start at 10 percent of the first \$10,000 investment, to which is added five percent of the next \$90,000 investment and two percent of any remaining investment within the zone.

Missouri's job and investment incentives are highly targeted: credits are modest outside enterprise zones but very generous within zones. Investment credits are typically linked to job creation, but can be granted even without job creation if investment meets a higher threshold. Credits within enterprise zones are targeted at creating employment for the hard to employ. Missouri targets basic industries outside of enterprise zones but allows credits for almost all industries within a zone.

Iowa. Iowa's job and investment credit package strongly encourages investment that creates good jobs. The package provides six percent of wages associated with new jobs, plus 10 percent of related investment. There is an additional credit equal to 1.5 percent of wages in excess of the county or regional average. To obtain investment credits, firms must

meet a number of qualifications. Qualifications require firms to add 50 new jobs, pay 80 percent of employee health insurance, and to pay minimum wages indexed to \$11 per hour in 1993 (or 130 percent of the average county wage, whichever is higher), and to make a minimum investment indexed to \$10 million in 1993. Firms must not reduce operations at another Iowa location. In addition, the firm must satisfy three out of a list of eight alternative qualifications, including that the firm offer a pension plan, produce high value-added goods or services, or invest in research and development.

In 1997, Iowa adopted a new set of Economic Development Enterprise Zone benefits. To qualify, firms must: a) create at least 10 new full-time jobs and sustain them for 10 years; b) pay 80 percent of health insurance; c) pay at least 90 percent of the average regional or county wage, but at least \$7.50 per hour; d) make a capital investment of at least \$500,000; and e) operate a business other than a retail establishment. Benefits include a 10 percent investment credit, a three percent job training credit, and a refundable 13 percent research and development credit.

Oklahoma. Oklahoma operates a number of alternative job and investment incentive plans. All apply to manufacturing plus a few other industries, with each program addressing somewhat different industries. Credits are available which can variously total 2.5 percent, five percent, or up to 10 percent of annual payroll for new or at-risk jobs, and last three, six, or 10 years, depending on industry, amount of new investment, quality of the new jobs, and location in or out of an enterprise zone. Credits are also available based on the amount of investment, in amounts of four percent to 20 percent (spread out over four years), depending on the same variables. Other credits may pay \$2,000, \$4,000, or \$8,000 per new job (again spread out over four years).

Other deductions and tax credits

Most states offer specialized deductions and tax credits that are intended to encourage specific behaviors on the part of firms, such as providing child care or using equipment that is energy-efficient or environmentally friendly. These credits are not very important to the locational decisions of most firms, nor were they intended to be. However, they could make a difference to locational decisions in certain very specialized cases. Some of these credits are listed by type in Table 3-8.

**Table 3-8:
Miscellaneous Corporation Income Tax Credits, Taxable Year 2001¹**

State	Basis
Colorado	Alternative Fuel Vehicle; Alternative Fuel Refueling Facility; Contributions to Enterprise Zone Administrator; Enterprise Zone Vacant Commercial Building Rehabilitation; Conservation Easement; Colorado Coal; Postconsumer Waste; Historic Property Preservation; Child Care Contribution; Child Care Center-Family Care Home Investment; Employer Child Care Facility Investment; Mining Impacts Assistance; Colorado Works Program; Contaminated Land Redevelopment; Rural Technology Enterprise Zone Internet Access; Low Income Housing; High Technology Scholarship contribution
Iowa	Assistive Device; Housing Business; Livestock Production; Property Rehabilitation
Kansas	Investment in Stock of Kansas Venture Capital Inc.; Investment in Local Seed Capital Pools; Child Care Facilities; Telecommunications Property; Swine Facilities Improvement; Costs of Plugging Oil or Gas Well; Habitat Management; Historic Structure Renovation
Missouri	Small Business Investment in CDC; Development of Abandoned Property; Neighborhood Assistance; Contribution to Development Assistance; Risk Capital Fund; Scholarship Fund; Infrastructure facilities; Adoption of Special Needs Child; Youth Opportunities and Violence Prevention; Wood Energy Producer; Low-Income Housing; Small Business Incubator; Shelters for Victims of Domestic Violence and Maternity Homes; Historic Structure Rehabilitation; Construction of Condominiums in Economically Distressed Neighborhoods; Charcoal Production; Transportation Development; Individual Training Account; Film Production Activities; Grape Growing or Wine Production; Disabled Access Expenditures
Nebraska	Non-highway use of Motor Vehicle Fuels; Contributions to Community Betterment Programs; Ethyl tertiary Butyl Ether
Oklahoma	Manufacturer's Gas; Energy Conservation Assistance Fund; Venture Capital Investment; Rural Capital Investment; Oklahoma Capital Investment; Oklahoma-mined Coal; Clean-Burning Motor Vehicle Fuel Property; Electric Motor Vehicle Property; Hazardous Waste Control; Agricultural Processing Cooperatives, Ventures, and Marketing Associations; Small Business Ventures; SBA Financing; Employer-Provided Day Care; Child Care Services Provider; Hepatitis A Employee Immunization; Commercial Space Industry; Air Transportation Establishments

¹ Note: this list is not exhaustive.

Sources: Information provided by individual state departments of revenue, state statutes, and Commerce Clearing House [2001].

Summary

Corporate income taxes comprise only a small percentage of total state and local tax revenues, about four percent nationally. They are nevertheless an important cost to businesses. Of taxes paid by “export base”¹⁶ firms to state and local governments, the corporate income tax generally ranks second in dollar amount after the property tax.

The income tax that will actually be paid by a firm depends not just on the tax rate, but also upon the method that the state uses to apportion income and on the types and amounts of credits for which the firm may qualify. Consequently, there is no simple way to compare corporate tax burdens across states. The scenarios in Chapter 8 will show how these relative burdens work in certain representative types of cases.

An evenly weighted three-factor formula was, until recently, the most widely used method of allocating income of multi-state firms. However, formulas that give extra weight to sales seem to be gaining momentum. Export-oriented firms can gain an advantage by locating their property and payroll in states that allow a sales-only formula. However, this option generally is not available in Kansas.

Economic development tax credits are abundant in all of the states examined in this study. Most important among these credits are those aimed at stimulating jobs and investment. Many states enhance these job and investment credits in geographically targeted enterprise zones. States are beginning to provide incentives targeted at stimulating the growth of high-quality jobs. Examples of this approach include Kansas and Iowa.

Kansas offers a competitive package of job and investment incentives. The incentives are available throughout the state to a wide range of industries. In contrast, many states confine incentives to narrowly-defined enterprise zones and to narrowly-defined groups of industries.

¹⁶ By “export base” firms we mean firms that sell to regional, national, and/or international markets. These firms are not tied to a particular location because of their markets.

CHAPTER 4: SALES TAX

Overview

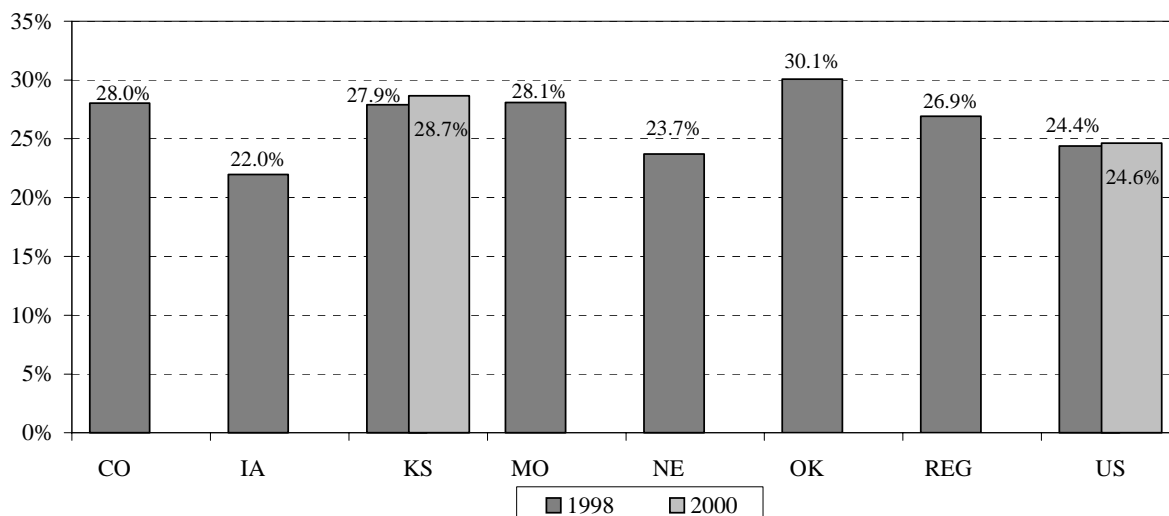
Sales tax collections comprise an essential part of state and local tax systems in the United States. Almost all state governments (forty-five states at last count) impose a general *ad valorem* tax on retail sales, gross receipts, or some other similar base. Local governments in 34 states, including all of the states in this study, also impose some form of general sales tax [Sales Tax Institute, 2001]. Strictly speaking, the term *sales tax* applies to goods and some services sold within a state's boundary, while the term *use tax* applies to items purchased out of state but brought into state for their final consumption. However, sales and use taxes generally are applied at the same rate and to the same categories of goods and services. Therefore, summary data in the tables and graphs in this chapter combine both revenue sources.¹⁷

Sales tax revenues in Kansas made up 28 percent of total state and local tax revenues in 1998, as shown in Figure 4-1. This share was nearly identical to the shares in Colorado and Missouri. Oklahoma was the highest at 30 percent. These states had a relatively higher reliance on sales tax revenues than Iowa, for example, whose share of total tax revenues attributable to the sales tax was only 22 percent. However, Kansas is fairly typical for the region. The average share in the rest of the region in 1998 was 27 percent. Looking at the two-decade trend in Figure 4-2, sales taxes are a growing part of tax collections in Kansas, and to some extent in the rest of the region and in the U.S. as well. Sales taxes comprised an average 22 percent of total tax collections in Kansas during the 1980s; this rose to 27 percent during the 1990s. Similarly, sales taxes averaged 25.8 percent of regional state and local tax collections during the 1980s, compared with 26.9 percent during the 1990s. While most states increased their reliance on the sales tax over time, during the 1980s and early 1990s Colorado significantly reduced its sales tax revenues as a share of total tax collections. This partly accounted for the slump during those years seen in Figure 4-2. Recently, however, Colorado has reverted to the normal trend of steadily increasing percentages of total revenues derived from sales tax. The nation as a whole has shown a slightly upward trend.

¹⁷ In addition, most states impose special sales taxes on particular goods such as tobacco and alcohol. These are not included in our report.

Figure 4-1:

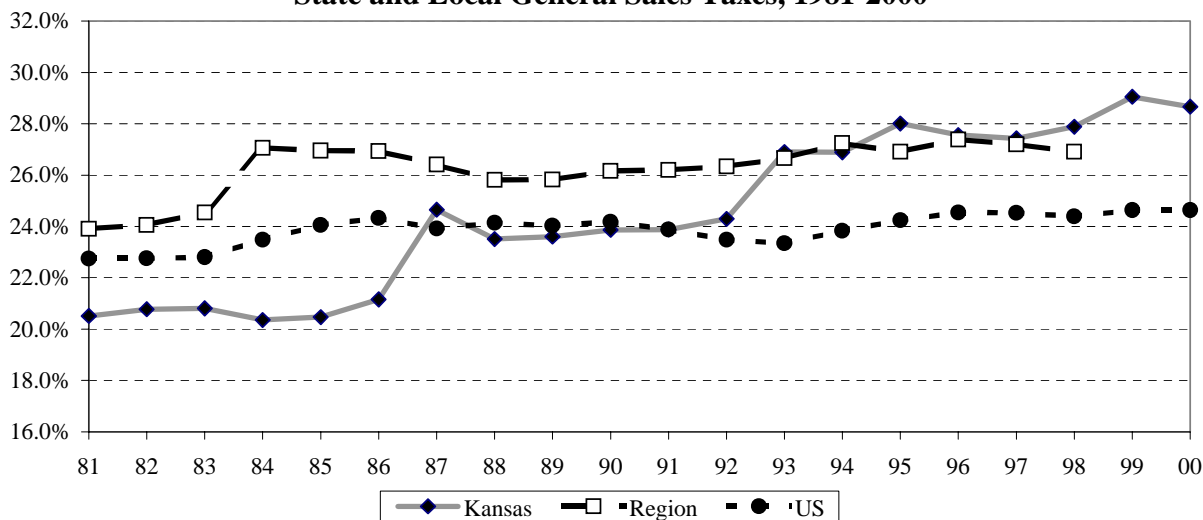
Share of State and Local Tax Revenue Provided by State and Local General Sales Taxes, 1998 and 2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 4-2:

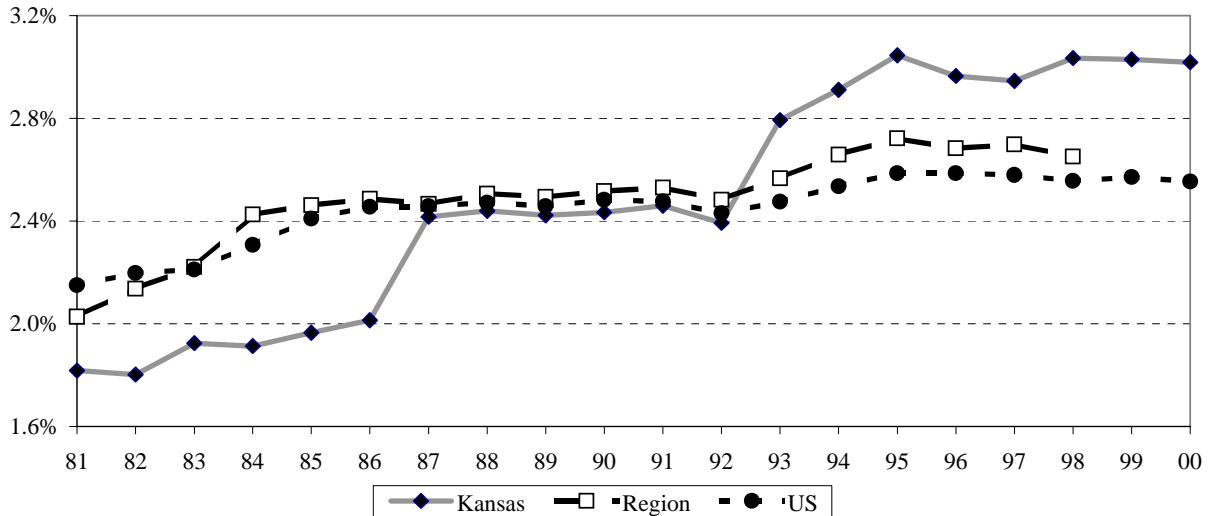
Share of State and Local Tax Revenue Provided by State and Local General Sales Taxes, 1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 4-3:

**State and Local General Sales Taxes as
Percent of Personal Income, 1981-2000**



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

As shown in Figure 4-3, sales taxes have claimed a growing share of personal income throughout the last two decades. During the 1980s, the ratio of state and local sales taxes to personal income averaged 2.1 percent for Kansas, 2.4 percent for the region, and 2.4 percent for the nation. During the 1990s, the share of personal income consumed by the sales tax grew to 2.9 percent in Kansas, 2.6 percent in the region, and 2.5 percent in the nation as a whole. In part, these trends are due to a shift away from the property tax at the local level in Kansas and the region. And in part, they are also due to overall increases in state and local spending as states and localities take on responsibilities that were once federal but have been scaled back in recent years.

Sales Tax Rates

State-level sales tax rates in the region range from a low of 2.9 percent in Colorado to a high of 5 percent in Nebraska and Iowa (See Table 4-1). Local sales taxes add to the tax bite, and in some jurisdictions rival or exceed state taxes in magnitude. For example, local taxes in Colorado may add up to seven percent in addition to the 2.9 percent state tax. Within the immediate region, combined county plus city local taxes are imposed as follows: Kansas City, Missouri—2.375 to 2.625 percent; Kansas City, Kansas—2.0 percent; Overland Park (Johnson County, Kansas)—2.1 percent; Topeka—1.90 percent; and Wichita—1 percent.

Local sales taxes vary widely within individual states. In some states such as Iowa, local sales taxes are rarely used; in other states such as Kansas and Missouri, the taxes are

prevalent. In some states (Nebraska) the maximum local rate is low; in other states (Colorado, Oklahoma) it is very high. An average local sales tax rate summarizes the frequency and intensity with which the local sales tax is used. To calculate an average local sales tax rate we first assumed the definition of the tax base for the local tax was the same as the definition of the state base. We then computed the ratio of local sales to state sales. We then multiplied by the state sales tax rate. For example, suppose the state sales tax rate is 5 percent, \$500 million is collected at the state level, and \$250 million is collected at the local level. We estimate the average local sales tax as $(\$250 \text{ million} / \$500 \text{ million}) * 0.05 = 0.025$, or, 2.5 percent.

**Table 4-1:
State and Local Sales Tax Rates, 2001**

State	State Sales Tax	Current Local Sales Tax Rates	Average Local Sales Tax: Metro Areas	Average Local Sales Tax: Non-Metro Areas
Colorado*	2.9%	0% to 7%	2.43% (2000)	0.73% (2000)
Iowa	5.0%	0% to 2%	0.88% (2000)	0.52% (2000)
Kansas	4.9%	0% to 3%	1.76% (2000)	1.57% (2000)
Missouri	4.225%	0% to 4%	2.78% (2000)	1.71% (2000)
Nebraska	5.0%	0% to 1.5%	1.70% (1999)	0.71% (1999)
Oklahoma	4.5%	0% to 6%	0.27% (1999)	0.34% (1999)

* Colorado is the only state to have changed its sales tax rate since the previous study: it had been 3%, until January 1st, 2001.

Sources: Information provided by individual states. Average local sales tax calculated from most recent information available.

Sales Tax Base and Exemptions

Most states use a fairly broad concept of retail sales in defining their sales tax bases. In fact, the sales tax combines elements of a direct tax on consumption, a direct tax on investment, and a direct tax on production. The extent to which each of these three activities is taxed depends on state-specific rules for sales tax exemptions and inclusions (see Table 4-2 for sales tax applicability and exemptions). Sales taxes also have a second round or indirect impact. For example, a tax on business inputs may increase the price of products purchased by households.

Consumption

States tax consumption directly when sales taxes are levied on purchases commonly made by households. Most tangible consumer products are included in the sales tax base, but states commonly make exceptions for food and drugs. Among the states in this study, Colorado, Iowa, and Nebraska exempt groceries, and all exempt prescription medications. In 1997, legislation in Missouri lowered the state tax rate on food to 1.225 percent. Measures to eliminate the Kansas sales tax on food for human consumption have been unsuccessful in recent years. States also include selected consumer services in the tax base—these may include residential utilities, telephone bills, restaurant meals (sometimes considered a good rather than a service), hotels, and personal services such as haircuts.

Investment

Sales taxes affect investment when states levy taxes on the purchase of machinery, equipment, tools, construction materials and construction services, or repairs (see Table 4-3 for investment and production-related exemptions). All of the states in this study make some provisions for machinery and equipment exemptions, and most make provisions for exemption of construction materials. The specific requirements for exemption vary widely by state. Criteria by which these exemptions can be compared include:

- the extent to which exemptions are limited to certain industries, particularly manufacturing;
- the extent to which exemptions are limited to direct use in the production processes and exclude auxiliary machinery and equipment;
- the extent to which exemptions are limited to new firms; and
- the extent to which exemptions are broadened in enterprise zones or other distressed areas.

We have summarized several states in detail in order to illustrate the range of possibilities.

**Table 4-2:
State Sales Tax Applicability and Exemptions, 2001**

State	Important Items Specifically Included	Important Items Specifically Excluded
Colorado	Sales of goods at retail plus selected services. – <i>Consumers</i> : telephone and telegraph services; restaurant meals; hotel and motel rooms. <i>Businesses</i> : gas and electricity sold for commercial (not industrial) consumption.	<i>Consumers</i> : sales of prescription drugs; sales of electricity, natural gas, fuel oil, coal, and other energy sources to residences; sales of food. <i>Businesses</i> : sales for resale; sales out of state; charges for internet access; sales of goods which become ingredients or component parts of manufactured, compounded, or finished goods; sales of electricity, natural gas, and fuel oil for use in processing, manufacturing, mining, irrigation, construction, communication, and all other industrial uses; ink, newsprint, and packaging. All purchases of machinery, machine tools and parts used directly and primarily in manufacturing are exempt from sales tax if purchase is over \$500. Pollution control equipment may be eligible for refunds contingent on state budget surpluses. Exemption from local sales tax is a local option.
Iowa	Sales at retail plus enumerated services. – <i>Consumers</i> : gas and electricity (though will be phased out by 2006); intrastate communications; water; amusements; repairs; barbers; dry cleaning; maintenance, and many other services. <i>Businesses</i> : intrastate communications, repairs, and maintenance.	<i>Consumers</i> : food (except for immediate consumption) and prescription drugs. Internet access charges. <i>Businesses</i> : sales for resale; sales out of state; building materials for resale; industrial machinery and computers; farm equipment; medical devices; services connected with construction or remodeling; chemicals, fuels, and electricity used in processing; materials used in processing.
Kansas	Sales of goods at retail plus selected services. – <i>Consumers</i> : restaurant meals and drinks; telephone; hotel and motel rooms. <i>Businesses</i> : computer software; out of state sales; installations; electricity; gas; water, unless consumed directly in production; repairs; and telecom.	<i>Consumers</i> : drugs, when prescribed; sales of gas, electricity, and heat to residential customers (though not exempt from local sales taxes). <i>Businesses</i> : sales for resale; sales of used farm machinery; all sales of tangible personal property or services used in constructing or enlarging a new or expanding qualified business facility; component parts of manufactured or produced goods or services; goods consumed (including those dissipated or depleted within one year) in the production of tangible personal property or services; all sales of machinery and equipment used as an integral or essential part of operation by manufacturing or processing plant. Gas, electricity, water (when consumed by manufacturing, mining, irrigation, or service producing processes), and new construction services.

State	Important Items Specifically Included	Important Items Specifically Excluded
Missouri	Sales of goods at retail plus selected services – Consumers : communications except basic phone charge, meals and drinks. Businesses : electricity, water, and gas unless otherwise exempted, and communications.	Consumers : water, natural gas, and electricity for domestic use; prescription drugs; basic phone; internet access fees. Businesses : sales for resale; materials and manufactured goods which, when used, become component parts of new goods; ingredients, machinery and equipment used to establish or expand manufacturing, mining, or fabricating plants, when the machinery is used directly in production; machinery and equipment replacements due to design or product changes; replacement parts for machinery and equipment used directly in production; electrical energy used in the actual manufacturing, processing, or mining of a product, if the total cost of electricity so used exceeds 10 percent of total production costs; farm machinery; natural gas; machinery and equipment used to abate air pollution.
Nebraska	Gross receipts from sales of goods at retail plus selected services. – Consumers : admissions to events; restaurant meals, utilities, cable TV, and intrastate communications; internet purchases. Businesses : computer software, utilities unless otherwise exempt, and intrastate communications.	Consumers : prescription drugs; food products for human consumption (excluding prepared meals). Businesses : sales for resale; goods shipped out of state; electricity, coal, gas, and other fuels, when more than 50 percent of the amount purchased is used directly in processing, manufacturing, refining, irrigation, farming, or generation; agricultural machinery, equipment and chemicals; goods which become an ingredient or component part of manufactured, processed, or fabricated goods. Also, qualified new business facilities with at least \$20 million investment or \$3 million investment and 30 new employees are entitled to a refund of sales and use taxes paid on the purchase of property for the new investment.
Oklahoma	Sales at retail plus selected services. – Consumers : hotel and motel rooms; telephone and telegraph; restaurant meals; and admissions to events. Businesses : sales of services and property used to develop or improve real estate, including materials, supplies, and equipment.	Consumers : electricity, water, and natural gas utility bills; sales of farm products directly to consumers; and prescription drugs. Businesses : sales for resale; sales out of state; sales of goods, wares, merchandise, tangible personal property, machinery, and equipment to a manufacturer for use in a manufacturing operation (here a manufacturing operation begins at the point where the materials enter the manufacturing site and ends at the point where a finished product leaves the manufacturing site); agricultural machinery and equipment; sales of tangible personal property to a qualified manufacturer to be consumed or incorporated in a new manufacturing facility (here qualified manufacturers must invest \$5 million and hire 100 employees, or invest \$50 million and hire 75 employees).

Note: The basic tax base in most of the states is the sale of tangible personal property at retail plus sales of selected services.

Sources: CCH Incorporated, *Business Incentives Guide, 2001*; Federation of Tax Administrators, *Sales Taxation of Services: 1996 Update*; and information from individual states including state web sites.

**Table 4-3:
State Sales Tax Exemptions for Machinery, Equipment,
Construction Materials and Services, and Utilities, 2001**

State	Machinery and Equipment Exemptions	Construction Exemptions	Utilities Exemptions
Colorado	Machinery or machine tools and parts are exempt when equipment is used directly and primarily in manufacturing. The purchase must be over \$500. Within an enterprise zone, these items are exempt when used in refining and mining activities as well as in manufacturing. In enterprise zones, goods used to build or repair machinery and machinery used to repair aircraft also qualify.	Construction labor is not taxable. Materials are taxable.	Electricity, natural gas, and industrial fuels used in manufacturing, mining, irrigation, communications, and transportation are exempt. Water is exempt. Intra-state telephone is taxed, interstate is exempt.
Iowa	Exemptions apply to industrial machinery, equipment, and computers, including replacement parts, when used directly in processing; R&D; manufacturing; data processing by insurance, financial, or commercial firms; or in recycling. Design and installation of new industrial machinery or equipment are exempt. Any other sales taxes paid on any tangible property except furnishings for use in an enterprise zone by a qualified business are refundable.	Construction labor including that used for repair and remodeling is not taxable. Materials are taxable. Taxes paid by a contractor in relation to the construction of a qualified facility in a quality jobs enterprise zone are refundable to the primary or supporting zone business.	Electricity, gas, fuels, and water used to operate machinery to processing goods are exempt. Intrastate telephone is taxed, interstate is exempt.
Missouri	<i>New and expanding firms:</i> Machinery, equipment, and parts used to establish new or to expand existing manufacturing, mining or fabricating plants in the state if such machinery and equipment is used directly in manufacturing, mining or fabricating a product which is intended to be sold ultimately for final use or consumption; replacement machinery and equipment satisfying the above. Pollution abatement equipment is exempt.	Construction labor is not taxable. Materials are taxable.	Electricity consumed in the manufacturing process is exempt if it exceeds 10 percent of production costs. Electricity or gas used in basic steel making is exempt. Water is taxed. Intrastate telephone is taxed, interstate is exempt.

State	Machinery and Equipment Exemptions	Construction Exemptions	Utilities Exemptions
Kansas	<p><i>New and expanding firms:</i> New or expanding manufacturing businesses that add at least 2 new jobs qualify for exemptions on all property and services used in constructing, expanding, or remodeling a facility. Non-manufacturing firms other than retail qualify for the above if they add 5 jobs. Retail firms qualify if they add 2 jobs and locate or expand in a city of population of 2,500 or less, or outside of a city in a county having a population of 10,000 or less. <i>Other:</i> Sales of machinery and equipment used directly and primarily for manufacturing, assembling, processing, finishing, warehousing, or distributing goods within a plant are exempt. Also, repair and replacement parts and accessories for the above.</p>	<p>All materials and services used in construction are exempt for qualified new or expanding businesses (see previous column). For other original construction, materials are taxed, and labor is exempt. Labor is taxable for repair or remodeling construction for businesses.</p>	<p>Electricity, gas, fuels, and water exempt when consumed by manufacturing, mining, irrigation, or service producing processes. Both intrastate and interstate telephone are taxed.</p>
Nebraska	<p><i>New and expanding firms:</i> Qualified business facilities with at least \$20 million in new investment or \$3 million in new investment and 30 new employees are entitled to a refund of sales and use taxes paid on the purchase of machinery, equipment and other property (except motor vehicles, aircraft, barges, and railroad rolling stock) related to the facility. "Credits" which can be used as sales tax refunds can be earned by qualifying new or expanding businesses when they invest \$75,000 and add at least two new full time employees.</p>	<p>Construction labor is not taxable. Materials are taxable. Materials may qualify for a refund if purchased as investment in real estate improvements of a qualified new or expanding firm.</p>	<p>Water used exclusively for manufacturing purposes is exempt. Electricity, gas, and other fuels are exempt provided more than 50 percent of the energy is used directly in processing, manufacturing, or refining. Intrastate telephone is taxed, interstate is exempt.</p>

State	Machinery and Equipment Exemptions	Construction Exemptions	Utilities Exemptions
Oklahoma	Sales of all tangible personal property to a qualified manufacturer to be consumed or incorporated in a new or expanded manufacturing facility (here qualified manufacturers must invest \$5 million and hire 100 new employees, or invest \$50 million and hire 75 new employees). Sales of machinery and equipment to a manufacturer for use in a manufacturing operation. Machinery and equipment used by qualified computer service firms. Sales of computers, data processing equipment, and telecommunication equipment for use in qualified new or expanding R&D establishments are eligible for a refund.	Construction labor is not taxed. Materials are taxable. <i>New or expanding firms</i> : Refunds on construction materials are allowed for new or expanded manufacturing facilities. The manufacturer must invest \$5 million and add 100 new jobs, or invest \$50 million and add 75 jobs. The term manufacturing also applies to warehousing facilities of Oklahoma manufacturers. This refund is not available if the firm also participates in the Quality Jobs Program (see Table 3-6).	Electricity, gas, and other fuel used in manufacturing are exempt. Water is exempt. Both intrastate and interstate telephone are taxed.

Note: For more specific definitions of new and expanding firms and enterprise zone qualifications (see Chapter 3, Table 3-7).

Sources: CCH Incorporated, *Business Incentives Guide, 2001*; Federation of Tax Administrators, *Sales Taxation of Services: 1996 Update*; and information from individual states including state web sites.

Kansas sales tax exemptions for investment

The basic investment exemption in Kansas applies to machinery and equipment used directly in manufacturing, assembling, processing, warehousing, or in-plant distribution of goods intended for resale. Labor services for new construction (whether or not in manufacturing) are also exempt, but building supplies and labor services used in remodeling are not. In 1998, the exemption was extended to include replacement parts, components, and accessories for machinery and equipment.

For qualifying new or expanding firms the exemptions are much broader. They extend to all property, including machinery, equipment, and building supplies, and services used in constructing, expanding, or remodeling a facility. Firms in manufacturing industries must add two jobs to receive the "new or expanding" designation while firms in non-manufacturing industries (any commercial enterprise other than manufacturing or retail) must add five jobs. Firms in retailing must add two jobs and locate or expand in a community of 2,500 or less, or, outside of a city in a county having a population of 10,000 or less. Corporate headquarters, computer services firms, and firms in selected other business service industries may be granted a sales tax exemption if the investment leads to the creation of at least 20 new full time jobs.

The new or expanding firm designation augments the basic machinery and equipment investment exemption in three ways. First, construction materials and construction labor services receive an exemption. Ordinarily, all building materials would be taxed, as would any labor associated with remodeling or repair. Second, establishments such as corporate headquarters and service-oriented businesses not covered under the basic investment exemption may qualify. Finally, machinery and equipment of manufacturers that does not qualify under the "direct use" criterion may receive an exemption.

Iowa sales tax exemptions for investment

The basic investment sales tax exemption in Iowa applies to machinery, equipment, and computers, including replacement parts, that are used directly and primarily in processing; research and development of new products; manufacturing; recycling; or data processing, when done by insurance, financial, or commercial firms. Design and installation of such equipment is also exempt. Most labor services related to new construction, remodeling, and restoration are exempt, but those related to building repairs are not.

One of the business incentive programs Iowa offers is the New Jobs and Income program. For firms that qualify, businesses can claim a sales tax exemption for industrial machinery, equipment, and computers if the equipment is directly related to the new jobs created by the location or expansion of the eligible business.

Oklahoma sales tax exemptions for investment

As of 1998, Oklahoma broadened its exemptions for machinery and equipment. All machinery and equipment for use in a “manufacturing operation” is exempt. Previously, machinery and equipment had to be directly used in the operation. Furthermore, all tangible personal property sold to qualified manufacturers that is consumed or incorporated into a new and expanding facility is exempt. This exemption has the impact of adding construction materials and supplies to the exemption list.

Oklahoma also extends sales tax exemptions to computer services firms. For firms that derive specified percentages of their sales from out-of-state customers, machinery and equipment are exempt.

Production

Production, in contrast to consumption or investment, is taxed to the extent that materials, utilities, fuels, business services, and other production-related purchases enter the sales tax base. All states with a sales tax include some items that are purchased by businesses. Examples often include office furniture, office supplies, and cleaning supplies. And all states exclude, to some extent, materials that become incorporated into new goods. For example, the hard drive that goes into a computer manufactured in a state is not taxable to the computer manufacturer. The extent to which states tax these “intermediate goods” varies. All states in our study exempt components, distinctly identifiable parts of the new good (such as the hard drive in the computer). Ingredients are also generally exempt, although whether a good is an ingredient is sometimes disputed. Laws covering products which are consumed or used up during production vary widely across the states. In Kansas and Oklahoma, consumables are clearly tax exempt. Iowa excludes materials used in processing. Colorado excludes materials which “enter into processing” of manufactured products. Under Oklahoma’s expanded sales tax exemptions for manufacturers, all goods and tangible personal property used in a manufacturing operation are covered.

Laws covering taxation of energy also vary across states. All states in our study allow some exemptions for electricity, gas, and other energy. For most of the states in this study, electricity, gas, and other industrial fuels are exempt when used directly in the manufacturing processes (Table 4-3). Several states extend exemptions beyond the narrow definition of manufacturing. For example, Kansas includes mining, irrigation, and service producing processes. On the other hand, some states provide an extremely narrow exemption. For example, Missouri exempts electricity only when it exceeds 10 percent of overall production costs; Missouri also exempts gas and electricity for steel producers.

Another business input that is frequently subject to the sales tax is telecommunications. Four of the six states in this study tax intrastate telephone services but exempt interstate calls. Kansas and Oklahoma tax both kinds of calls at the regular rate.

Taxation of services

As mentioned in the discussion above, many states include services sold to consumers and businesses in their tax bases. A study by the Federation of Tax Administrators provides a systematic overview of service taxation.¹⁸ The organization examined taxation of some 160 services, including utilities (business and household), consumer personal services, business services, and installation and repair. The study finds a great deal of diversity in the extent to which states include services in the sales tax base. Of the services covered by the FTA study, some states (New Mexico) tax almost all services, while others (California, Illinois) tax relatively few.

Among the states in the region, Iowa stands out as taxing a high number of services, including 94 services in its sales tax base (Table 4-4 and Appendix 2). Kansas also taxes a substantial number of services, but taxes only about two-thirds as many business and computer services as Iowa. Among the states in the region, Colorado taxes the smallest number of services (14), limiting its sales tax base almost exclusively to material products.

**Table 4-4:
Sales Taxes on Services, 1996**

State	Utilities (Business Use)	Personal Services	Business and Computer Services	Fabrication, Installation, Repair	All Services
Total possible in category	8	20	41	19	164
<i>Number Taxed in</i>					
--Colorado	2	0	3	4	14
--Iowa	7	15	18	14	94
--Kansas	7	10	11	16	76
--Missouri	6	1	3	1	28
--Nebraska	7	6	9	5	49
--Oklahoma	6	1	6	1	32

Source: Federation of Tax Administrators, *Sales Taxation of Services: 1996 Update*, p. 2

¹⁸ The study was published in 1997 and has not been updated.

Internet taxation

The subject of states' abilities to collect sales taxes from sales on the internet has been increasingly debated the last few years. States and municipalities have shown concern that the growing amount of out-of-state sales done through internet "e-tailers" might diminish the amount of sales tax revenues they collect. A recent study done through the University of Tennessee by the Institute for State Studies [Ling, 2001] estimated that state and local government units can expect to forego a total of \$13 billion in sales tax revenues in 2001 due to sales through the internet. The current conditions originated with a 1992 ruling by the Supreme Court which stipulates that states can only require retailers who have a physical presence in their state to collect sales taxes. For example, a mail order catalogue company or an online retailer whose operation is located outside of Kansas can not be required to collect Kansas sales taxes on its sales to Kansas customers. The reason the Supreme Court ruling came about was to protect catalogue and on-line retailers from dealing with the incredible diversity of sales tax structures across the nation, which includes over 7,500 individual taxing units. Having systems in place to calculate the possible sales tax in every location would be quite costly to companies. Instead, most states have laws which enjoin the consumer to calculate his own sales taxes on out-of-state purchases and remit these to the state at the end of the year. In reality, most consumers are not even aware of these statutes, nor has there yet been an effective method of enforcing such requirements. The result is that sales taxes are rarely ever collected on out-of-state sales to households.

Given the ever-increasing amount of shopping on the internet, states are lobbying for a change. Specifically, they are taking the initiative to simplify their tax codes while attempting to pass legislation or reverse the 1992 court ruling in order to grant states the authority to require out-of-state firms to take responsibility for collecting the appropriate sales taxes. To these ends the Streamlined Sales Tax Project was begun in 1999 by a group of state tax officials. To date the project has seen 44 states signed on to participate, including Kansas and all the other states in this study except for Colorado. So far the efforts have been primarily in the lobbying arena, as 44 state governors signed a letter to Congress in August of this year, asking that a moratorium on internet access taxes due to expire on October 21, 2001 not be extended unless it also include provisions for dealing with the sales tax issue. At the time of this report legislators were still debating, but due to the short timeline and the controversy surrounding internet sales taxation, it appears likely the moratorium will be extended and sales tax put off for another bill.

Nevertheless, the Streamlined Sales Tax Project is moving ahead. In addition to requiring participating states to discuss methods of simplifying tax laws, project directors have also announced a pilot to test software developed by Taxware and Hewlett-Packard that firms can use. It is designed to mesh with existing online ordering software to extract information about the purchaser's location and then automatically calculate the appropriate sales tax, as well as make automatic remittance payments to each of the other

participating states. The pilot is hoped to be in operation sometime this year in Kansas, North Carolina, Michigan, and Wisconsin. The 40 remaining project states have the option of joining the pilot, but it is expected most will wait until the evaluation of the current program is complete. This could take up to two years.

Summary

Sales taxes comprise one-fourth of state and local tax revenue. The impact of the sales tax falls on consumption, investment, and production. States differ greatly in their definitions of the sales tax base and in the exemptions they allow for various goods and services. From the point of view of a state's competitiveness, exemptions on machinery and equipment, installation (construction) and repair, and energy stand out as providing significant cost savings to firms.

Combined state plus local sales tax rates in Kansas fall in the mid-range for the region, averaging about 6.6 percent. On the positive side, Kansas provides generous sales tax exemptions on many investment purchases: manufacturing, warehousing, and processing equipment, original construction, and most investment-type expenditures of new and expanding firms. On the negative side, Kansas taxes more kinds of business services than do many of the surrounding states.

CHAPTER 5: PROPERTY TAX

Introduction

State and local governments rely on a triad of taxes—income, sales, and property—to provide most of their tax revenues. Each of these taxes affects a different base. Property taxes are taxes levied on wealth of households and businesses rather than on their current income or transactions. Depending on the jurisdiction, taxable assets may include land, buildings, business equipment, inventories, household durable goods, and, in a few cases, intangible assets such as cash and bonds. Taxable asset valuations react only slowly to the ups and downs of the business cycle. For this reason, policy-makers and economists generally consider property taxes to be a stable revenue source, appropriate for local government mandates such as the provision of public education.

Property taxes comprise about 30 percent of combined state and local tax revenues for the nation as a whole. As shown in Figure 5-1, Kansas closely matches the national average, with property taxes providing 29 percent of tax revenues in 1998 and 30 percent in 2000.¹⁹ Two states within the region deviate considerably from the national average: in Missouri, property taxes contribute only about 23 percent of state and local tax revenues, while in Oklahoma they contribute even less—about 15 percent.

Although property taxes are levied by both state and local governments, by far the largest dollar amounts are collected at the local level. Indeed, they provide the single largest source of tax revenue for local governments in the United States—about 73 percent of local taxes as of 2000. Within the region, property tax shares range from 52 percent of local tax revenues in Oklahoma to 91 percent in Iowa. Currently, property taxes provide about 76 percent of local tax revenue in Kansas.

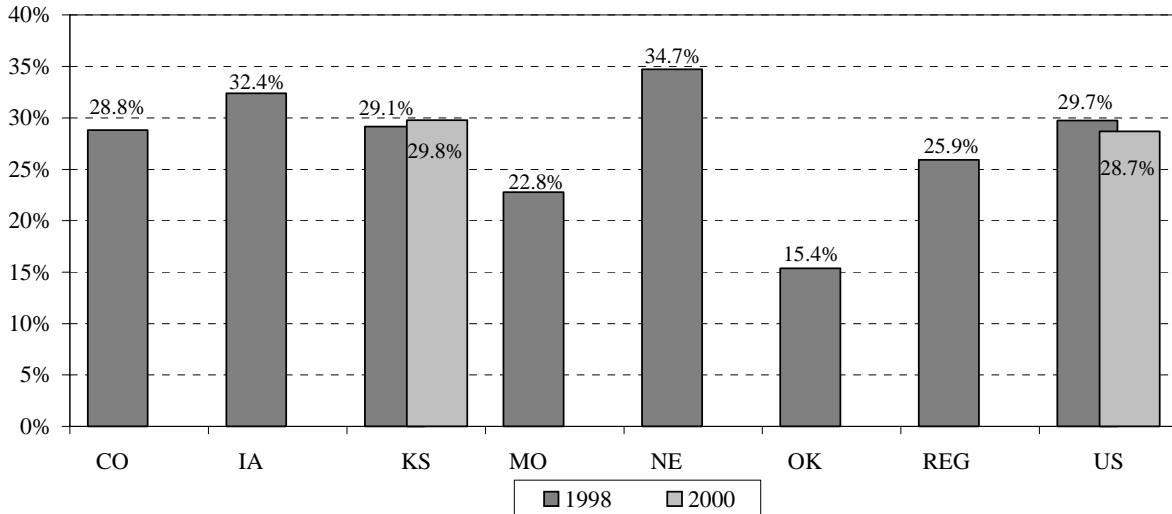
Nationally, property taxes have comprised a fairly stable share of state and local tax revenues over the last two decades, fluctuating within the narrow range of 29 to 31 percent (Figure 5-2). In contrast, all of the states in the region have reduced their reliance on the property tax since the beginning of the 1980s, as local governments have diversified their tax bases. In Kansas, the property tax share fell a total of about nine percentage points over the period 1981-2000. Colorado, Iowa, Missouri, and Nebraska showed less dramatic but still statistically significant declines. Oklahoma also decreased its reliance on the property tax, but the decrease was so small as to be statistically insignificant.²⁰

¹⁹ Data for 2000 were available for Kansas and for the U.S. For the other states in the region, data were available through 1998 only. See Appendix 1 for further explanation.

²⁰ In this context, statistical significance compares the change in the property tax share over the two-decade period to the usual year-to-year fluctuations in the share.

Figure 5-1:

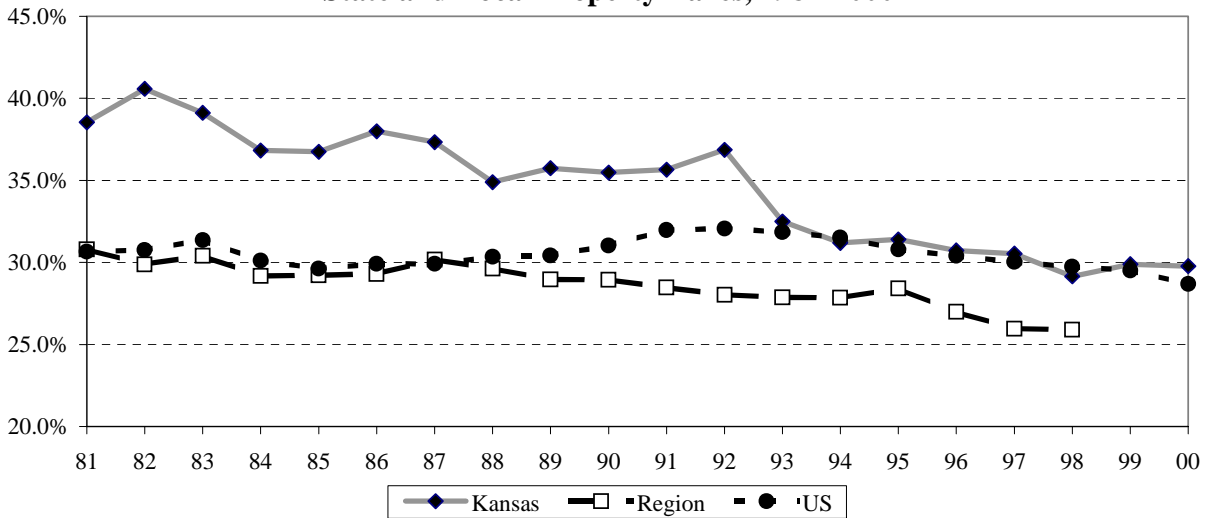
Share of State and Local Tax Revenue Provided by State and Local Property Taxes, 1998 and 2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 5-2:

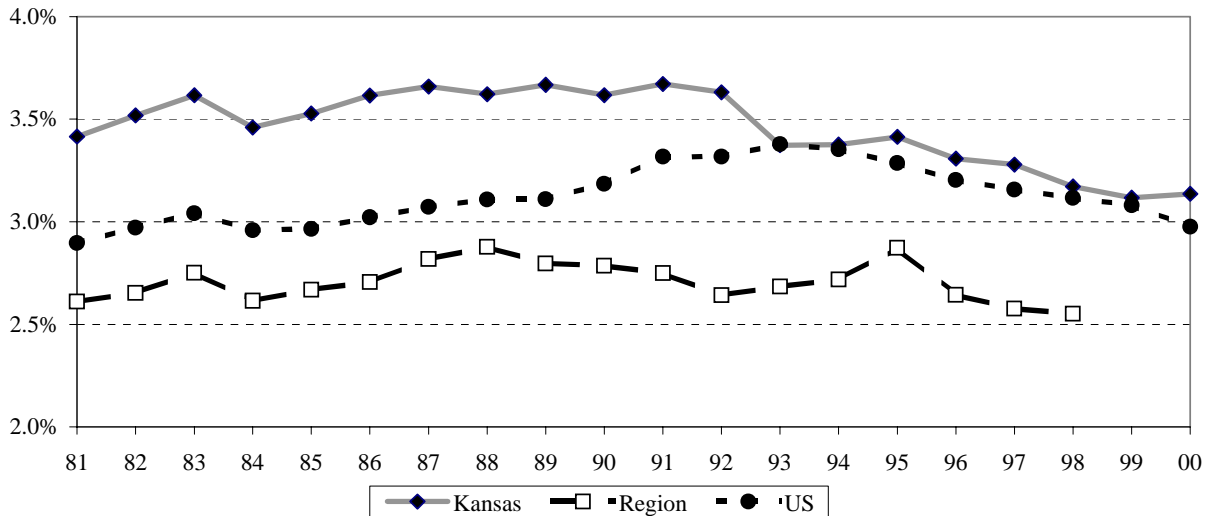
Share of State and Local Tax Revenue Provided by State and Local Property Taxes, 1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

Figure 5-3:

State and Local Property Taxes as
Percent of Personal Income, 1981-2000



Sources: U.S. Bureau of the Census, *State Government Tax Collections*; U.S. Bureau of the Census, *State and Local Government Finances*; and PRI estimates (see Appendix 1).

An enhanced picture emerges if we look at the percentage of income devoted to the property tax. Nationally, the property tax as a share of income rose during the late 1980s to early 1990s. In real dollar terms, property tax collections rose modestly during this period, while income was fairly stagnant. Since the early 1990s, property taxes have returned to the level of about three percent of personal income nationally. In Kansas and the region, trends have been somewhat different than those observed for the nation. As mentioned earlier, state and local governments throughout the region have taken measures to reduce their reliance on the property tax. For example, Kansas legislated several changes that stemmed the growth of property taxes during the 1991 legislative session as part of school finance reform; the effects became fully apparent by 1993. These changes moved Kansas closer to the national average. Further reductions in the mandatory school mill levy in 1997 and 1998 kept Kansas near the national average share of personal income devoted to the property tax.

Comparing Property Taxes Across States

Aggregate measures of property taxation such as those shown in Figures 5-2 and 5-3, while interesting in their own right, provide an incomplete picture of the level of property taxation facing an individual firm or homeowner. The property tax includes two very different bases for taxation: residential property and business property. Although all taxes may ultimately be passed along to households, a home-owner's experience of directly

paying the residential property tax is very different from a consumer's experience of indirectly paying business taxes in the form of increased consumer prices.

Also, the actual tax paid by a property owner results from a complex interaction of tax rates, the types and amount of property owned, the definition of the tax base, assessment practices, and whether the property qualifies for any special tax incentives. The concept of *effective property tax rates* provides a key to understanding property taxation and to comparing taxes across states. The definition of an effective tax rate is straightforward: it is the annual tax bill divided by the true market value of a piece of property. Effective rates vary not only across states and municipalities, but also among the major categories of property: residential real estate, commercial real estate, business machinery and equipment, and inventories.

Effective tax rates for real estate

The effective tax rate depends on three components: the applicable mill levy, the statutory assessment ratio, and the actual ratio between appraised and market property values. Table 5-1 details the calculation of effective tax rates for real estate (and for inventories, which are taxed in only one state in the region). Table 5-2 performs similar calculations for machinery and equipment.

The first key to understanding effective tax rates is the mill levy, defined as the dollar amount of the property taxes due per \$1,000 assessed property valuation. The total mill levy on a piece of property generally results from a combination of state taxes (in states that make use of the property tax), county taxes, city taxes, school district taxes, and taxes for special services such as sewers or fire protection.

Within a single state, mill levies vary widely from location to location. Table 5-1 shows statewide average mill rates, calculated as total tax collections divided by total assessed valuation. It also shows aggregates for metropolitan and non-metropolitan areas within the states. Property tax levies are generally lower in non-metropolitan areas because the level of government-provided services (streets, libraries, police and fire protection, etc.) is generally lower.

Property mill levies are not directly comparable across states. One reason is that statutory assessment ratios differ. The statutory ratio defines the percentage of a property's appraised value that is entered on the tax rolls. Most states in the region apply different ratios to different classes of property. For example, Kansas assesses residential property at 11.5 percent, commercial and industrial real estate at 25 percent, industrial and commercial machinery and equipment at 25 percent, and public utility property at 33 percent.

The states surrounding Kansas employ a variety of assessment patterns. In Iowa, new industrial equipment has a zero assessment ratio versus 100 percent for business real estate

and 56.3 percent for residential property. The residential ratio is adjusted annually. A 1982 constitutional amendment in Colorado requires that residential property provide no more than 45 percent of the tax base. In order to achieve this goal, assessment ratios of all other property are set at 29 percent and the residential ratio is adjusted by the Legislature. Missouri assesses residential property at 19 percent, commercial real estate at 32 percent, and machinery and equipment at 33.3 percent. Oklahoma specifies a range of permissible rates for various property classes in Oklahoma, while the actual rates are chosen locally. Currently, rates between 11 percent and 13.5 percent apply to real property, while rates of 10 percent to 15 percent apply to personal property. In Nebraska, the Constitution sets assessment ratios at a uniform 100 percent of market value.

Property appraisals often fail to indicate market property values correctly. When this occurs, actual assessment ratios vary from statutory assessment ratios. All of the states covered by this study make available statistics on discrepancies between appraised and market values for various categories of real estate. Such statistics are the result of so-called “ratio studies” that compare sales prices to appraised values for real estate transactions. In Nebraska and Iowa, valuations in local taxing districts are “equalized”—that is, adjusted for severe discrepancies in assessment ratios. Actual real estate assessment ratios, calculated by taking appraisal discrepancies into account, are shown in the fourth column of Table 5-1.

A further complication applies to residential real estate. In some states, homeowners qualify for various homestead and other exemptions that reduce property taxes on residences. In Kansas, low income homeowners and renters may claim partial refunds for property taxes (or rent representing property taxes). In addition, the first \$20,000 of the appraised value of a residential property is exempt from the state-mandated school levy, currently set at 20 mills. In Oklahoma, the majority of home owners receive an exemption on the first \$1,000 of assessed valuation; in Iowa, home owners receive a credit on the first \$4,850 of actual value.

Effective tax rates, that is, taxes as a percent of actual market value, are calculated in the fifth column of Table 5-1. These rates incorporate the state average mill rate, statutory assessment ratios, and an approximate ratio between the true and the appraised value for each class of property. The rates measure the average property tax burden on various types of real estate and personal property; they are comparable across states. These rates do not account for the possibility that property taxes will be abated for economic development purposes. That issue is analyzed separately in a later section of this chapter.

**Table 5-1:
Effective Property Tax Rates for Residential Real Estate,
Commercial Real Estate, and Inventories**

State and Area	Average Mill Levy	Statutory Assessment Ratios (%)		Estimated Actual Assessment Ratios (%) ¹		Effective Tax Rates (%) ²	
<i>Colorado</i>							
Statewide	75.60	Resid.	9.74	Resid.	9.66	Resid.	0.73
		Comm./Ind.	29.00	Comm./Ind.	28.72	Comm./Ind.	2.17
Metro	84.87	Resid.	9.74	Resid.	9.66	Resid.	0.82
		Comm./Ind.	29.00	Comm./Ind.	28.60	Comm./Ind.	2.43
Nonmetro	57.76	Resid.	9.74	Resid.	9.67	Resid.	0.56
		Comm./Ind.	29.00	Comm./Ind.	29.08	Comm./Ind.	1.68
<i>Iowa</i>							
Statewide	30.84	Resid.	56.30	Resid.	52.34	Resid. ³	1.54
		Comm./Ind.	100.00	Comm./Ind.	89.45	Comm./Ind.	2.76
Metro	35.00	Resid.	56.30	Resid.	51.75	Resid. ³	1.53
		Comm./Ind.	100.00	Comm./Ind.	92.54	Comm./Ind.	2.85
Nonmetro	27.87	Resid.	56.30	Resid.	52.76	Resid. ³	1.56
		Comm./Ind.	100.00	Comm./Ind.	87.25	Comm./Ind.	2.69
<i>Kansas</i>							
Statewide ⁴	112.38	Resid.	11.50	Resid.	10.94	Resid. ⁴	1.19
		Comm./Ind.	25.00	Comm./Ind.	23.73	Comm./Ind.	2.67
Metro ⁴	112.49	Resid.	11.50	Resid.	10.95	Resid. ⁴	1.19
		Comm./Ind.	25.00	Comm./Ind.	23.61	Comm./Ind.	2.66
Nonmetro ⁴	112.24	Resid.	11.50	Resid.	11.05	Resid. ⁴	1.20
		Comm./Ind.	25.00	Comm./Ind.	24.05	Comm./Ind.	2.70
<i>Missouri</i>							
Statewide	59.89 Surtax ⁵ 10.17	Resid.	19.00	Resid.	18.82	Resid.	1.13
		Comm./Ind.	32.00	Comm./Ind.	31.39	Comm./Ind. ⁵	2.20
Metro	65.04 Surtax ⁵ 12.64	Resid.	19.00	Resid.	18.86	Resid.	1.23
		Comm./Ind.	32.00	Comm./Ind.	31.21	Comm./Ind. ⁵	2.42
Nonmetro	45.92 Surtax ⁵ 3.92	Resid.	19.00	Resid.	18.71	Resid.	0.86
		Comm./Ind.	32.00	Comm./Ind.	31.86	Comm./Ind. ⁵	1.59

State and Area	Average Mill Levy	Statutory Assessment Ratios (%)		Estimated Actual Assessment Ratios (%) ¹		Effective Tax Rates (%) ²	
<i>Nebraska</i>							
Statewide	18.58	Resid.	100.00	Resid.	94.48	Resid.	1.76
		Comm./Ind.	100.00	Comm./Ind.	95.63	Comm./Ind.	1.78
Metro	19.88	Resid.	100.00	Resid.	94.14	Resid.	1.87
		Comm./Ind.	100.00	Comm./Ind.	95.31	Comm./Ind.	1.90
Nonmetro	17.39	Resid.	100.00	Resid.	95.11	Resid.	1.65
		Comm./Ind.	100.00	Comm./Ind.	96.34	Comm./Ind.	1.68
<i>Oklahoma</i>							
Statewide	93.20	Resid.	11.33	Resid.	11.29	Resid. ⁶	0.96
		Comm./Ind.	11.33	Comm./Ind.	11.30	Comm./Ind.	1.05
			12.23	Inventory	12.23	Inventory ⁷	1.14
Metro	103.26	Resid.	11.27	Resid.	11.24	Resid. ⁶	1.06
		Comm./Ind.	11.27	Comm./Ind.	11.23	Comm./Ind.	1.16
		Inventory	12.45	Inventory	11.19	Inventory ⁷	1.29
Nonmetro	78.40	Resid.	11.45	Resid.	11.41	Resid. ⁶	0.81
		Comm./Ind.	11.45	Comm./Ind.	11.44	Comm./Ind.	0.91
		Inventory	11.96	Inventory	11.49	Inventory ⁷	0.94

¹ All of the states in the region conduct studies comparing sales prices to appraised or assessed valuations. The estimated actual assessment ratio is based on the results of these studies. The ratio is defined as: (assessed property value)/(true market value of property).

² The effective property tax rate is defined as the dollar amount of taxes as a percent of the actual market value of property. In terms of this table, the effective tax rate is estimated by [average mill levy/1000 * estimated actual assessment ratio]. In Kansas, Iowa, and Oklahoma, additional adjustments are made to the residential property tax.

³ In Iowa, residential property taxes are assessed at a ratio defined each year. For 2000, the ratio was 56.3%. The first \$4,850 of a residential property's appraised value is not taxed. The statewide average mill levies have been adjusted to reflect this exemption. The effective residential tax rate is based on a home valued at \$100,000.

⁴ In Kansas, the first \$20,000 of appraised valuation of a residential property is exempt from a statewide 20 mill levy for schools. The statewide average mill levies reported by the Kansas Department of Revenue have been adjusted to reflect this exemption. The effective residential property tax rates have also been adjusted, based on the assumption that the average residential property is valued at \$100,000.

⁵ In Missouri, a surtax applies to commercial real estate. The effective tax rates for commercial real estate reflect the addition of the surtax.

⁶ In Oklahoma, the first \$1,000 of a residential property's assessed value is exempt. The effective residential tax rate is based on a home valued at \$100,000.

⁷ Oklahoma is the only state in the region to tax inventories.

Sources: Calculations by PRI, based on information provided by state agencies and state statutes.

Within the region surrounding Kansas, the states show a wide range of effective rates for various classes of real property. For residential property, Colorado averages the lowest tax rate (0.73 percent) while Nebraska averages the highest (1.76 percent). In Colorado, residences are assessed at only about one-third of the ratio for businesses, accounting for the fairly low burden on residences. Kansas ranks in the mid-range of the region for residential property, with taxes averaging 1.19 percent on a property valued at \$100,000. For commercial real estate, Oklahoma ranks lowest in the region (1.05 percent). Iowa (2.76 percent) and Kansas (2.65 percent) have the highest commercial real estate taxes in the region. Oklahoma is unique in the region in that it also taxes business inventories.

Effective tax rates for machinery and equipment

The concept of an effective tax rate for machinery and equipment is the same as for real estate: the tax divided by the true value of the property. However, some additional considerations figure in the case of machinery and equipment.

The “true” value of machinery and equipment is an idealized measurement. In practice, states rely on various formulas and schedules to estimate machinery and equipment values. An identical piece of machinery with an identical age will probably have a different appraisal value in each state. Among the considerations that go into valuing machinery and equipment:

- Are additional charges such as sales taxes and delivery charges counted as part of the machinery’s value? In Kansas, sales taxes, delivery charges, installation costs, and other such items are excluded from the appraised value. They are included in the other states in our study.²¹
- How is depreciation estimated? Does the state use straight line depreciation formulas, accelerated depreciation formulas, estimates of the value of used equipment (called the sales-comparison approach), or some other method? In Kansas, the method is straight line of seven years or over the expected life of the equipment, if less than seven years. Other states in the region rely on a variety of methods and schedules. Often schedules show the “percent good” for a piece of machinery or equipment. Some depreciation schedules taper off fairly quickly (Missouri-Kansas City)²² while others taper off more slowly (Colorado).
- How does the state treat inflation? Is the appraised value of machinery and equipment increased to reflect inflation, or are appraisals based on the nominal purchase price of the property? In Colorado and Oklahoma, the purchase price of machinery and

²¹ Iowa is excluded from the discussion of machinery and equipment valuation because it no longer taxes these types of property.

²² In Missouri, each local assessor’s office has its own depreciation schedules. Our analysis is based on schedules from Kansas City, Missouri, which, according to the assessor’s office, are fairly typical of those used throughout the state.

equipment is “trended forward” to reflect increases in value due to inflation. In the remainder of the region, no such inflationary adjustments are made.

- Does the appraised value of an old piece of machinery or equipment taper off to zero, or is there a minimum appraisal value for any equipment still in use? In Kansas, the minimum appraisal value for any property still in use is 20 percent of the nominal retail price when new. In Colorado, the minimum is 15 percent of actual replacement value. The other states in the region have no such absolute minimums.

To illustrate the level of machinery and equipment taxation in the states in our region, we rely upon three hypothetical examples. The first example is a new piece of machinery or equipment during its first year on the assessment rolls; the second example is a piece of machinery or equipment with a five-year expected life, averaged over a five-year period; the third is a piece of machinery or equipment with a ten-year asset life, averaged over a 10-year period. For the sake of comparison, we assume that sales taxes, delivery, and installation taxes amount to 10 percent of the purchase price. We also assume that the “true” depreciation of the property (in contrast with the depreciation used for appraisal purposes) is straight line over the life of the asset. In each case, the effective rate is calculated by taking estimated taxes on the property and dividing by the “true” remaining value. Table 5-2 shows the results of these calculations.

Taxes on machinery and equipment in Kansas are the highest or second highest within the region, depending on the region of the state and the asset life of the property. In year 1, machinery and equipment in Kansas faces an average tax rate of 2.81 percent, in contrast with 2.41 percent in Colorado. For property with a ten-year asset life, the rankings of Colorado and Kansas are reversed: long-lived properties are treated more favorably in Kansas because their assessment quickly declines to 20 percent of purchase price, and because no adjustments are made for the cumulative inflation that might be experienced over an extended time period. Iowa, which eliminated property taxes on new machinery and equipment in 1995, clearly has the lowest rate in the region. After Iowa, Oklahoma boasts the most favorable rates for these classes of property.

For several years, the high level of taxation on business machinery and equipment has caused concern in the Kansas business community. Eighty percent of manufacturers who responded to a 1997 survey said that the property tax on machinery and equipment in Kansas had a negative effect on their investment and expansion decisions [*A Kansas Vision for the 21st Century*, Kansas, Inc., 1997, p.5-3]. This tax adds to the “price” of owning machinery, and, according to the laws of supply and demand, discourages its use. In Kansas, an income tax credit for property taxes paid is one effort to remedy this perceived problem (see Chapter 3); however, efforts to increase the size of the tax credit have been unsuccessful to date. Kansas also has a program of property tax abatements for new investment in most businesses that primarily sell outside the state. This program is administered at the local level (see below). In many localities, these abatements are quite generous and do substantially offset the property tax burden on investment.

**Table 5-2:
Effective Property Tax Rates for Machinery and Equipment, 2000**

State and Area	Mill Levy	Assessment Ratio (%)	Effective Rate, Year 1 (%)	Effective Rate over Asset Life 5 Year Asset	Effective Rate over Asset Life 10 Year Asset (%)
<i>Colorado</i>					
Statewide	75.60	29.00	2.41	2.35	2.61
Metro	84.87	29.00	2.71	2.64	2.93
Nonmetro	57.76	29.00	1.84	1.80	2.00
<i>Iowa</i>					
Statewide	29.67	0.00	0.00	0.00	0.00
Metro	33.67	0.00	0.00	0.00	0.00
Nonmetro	26.82	0.00	0.00	0.00	0.00
<i>Kansas</i>					
Statewide	112.38	25.00	2.81	2.51	2.21
Metro	112.49	25.00	2.81	2.51	2.21
Nonmetro	112.24	25.00	2.81	2.50	2.20
<i>Missouri</i>					
Statewide	59.89	33.33	2.20	2.01	1.85
Metro	65.04	33.33	2.20	2.01	1.85
Nonmetro	45.92	33.33	2.20	2.01	1.85
<i>Nebraska</i>					
Statewide	18.58	100.00	2.04	1.84	1.79
Metro	19.88	100.00	2.19	1.96	1.92
Nonmetro	17.39	100.00	1.91	1.72	1.68
<i>Oklahoma</i>					
Statewide	93.2	12.23	1.25	1.22	1.36
Metro	103.26	12.45	1.41	1.38	1.53
Nonmetro	78.4	11.96	1.03	1.01	1.12

Sources: Calculations by PRI, based on information provided by state agencies, state statutes, and local assessors.

Changes in Kansas Property Taxes

In 1991, Kansas legislation on school finance resulted in significant reductions in average mill levies. A subsequent constitutional amendment changed assessment ratios, and, in 1997 and 1998, legislation reduced the state-imposed school mill levy. Altogether, these changes have combined to create substantial changes in Kansas effective property tax rates over the last several years (Table 5-3).

Table 5-3:
Changes in Kansas Property Taxation since 1991

Description	1991	2000	% Change
Average Statewide Mill Levy	125.26	112.38	-10.3
Statutory Assessment Ratio: Residential (%)	12.00	11.50	-4.2
Statutory Assessment Ratio: Comm./Ind. (%)	30.00	25.00	-16.7
Statutory Assessment Ratio: Mach./Equip. (%)	20.00	25.00	25.0
Est. Actual Assessment Ratio: Residential (%)	11.90	10.94	-8.1
Est. Actual Assessment Ratio: Comm./Ind. (%)	29.80	23.73	-20.4
Est. Actual Assessment Ratio: Mach./Equip. (%)	20.00	25.00	25.0
Estimated Effective Tax Rate: Residential (%)	1.49	1.19	-20.1
Estimated Effective Tax Rate: Comm./Ind. (%)	3.73	2.67	-28.4
Estimated Effective Tax Rate: Mach./Equip. (%)	2.50	2.81	12.4

Source: Kansas Department of Revenue, *Statistical Report of Property Assessment and Taxation: 2000*.

For residential property, the changes have amounted to about a 21 percent property tax decrease per dollar of market value for the state as a whole. For commercial and industrial real estate, the decreases have been even greater, about 28 percent on average. On the other hand, machinery and equipment has experienced a 12 percent increase in effective taxation, largely due to changes in the assessment ratio.

Property Tax Abatements and Exemptions

The previous discussion of property taxes examined the usual system of rates and valuations. However, state and local governments frequently offer property tax abatements as an incentive to attract new firms and to encourage industry expansions. Arguably, property tax abatements provide the single most important tax incentive at the state and local level. Without abatements, property taxes often exceed state and local income taxes.

When granted, tax abatements may amount to more than 50 percent of the tax liability. Thus, property tax abatements provide a substantial reduction in a large tax.

Theoretical Issues Concerning Property Tax Abatements

Two theoretical issues arise concerning the use of property tax abatements. The first is whether tax abatements or other incentives actually attract new industry; research on this issue is mixed [Anderson and Wassmer, 2000; Bartik, 1991; Grady, 1987; Pomp, 1986; Steinnes, 1984]. Studies that examine issues of taxation and growth more broadly find a small negative relationship between the level of taxation and the level of business activity [Bartik, 1991]. Summarizing a number of previous studies, Bartik concludes that a 10 percent decrease in taxes stimulates at most about a 2 percent increase in business activity.

The second issue concerns the use of state and local discretion in granting abatements [Coffman, 1993]. In many states, abatements are not automatic but are rather the result of state and local decision-making. On one hand, the use of discretionary authority potentially avoids abatements that do not yield positive net benefits to a community. On the other hand, discretion may lead to what economists call "rent seeking" behavior. This simply means that firms will spend substantial resources in order to try to secure a favorable decision. Related to this is the potential for "threat" behavior by firms. A recent case in Maryland and Virginia illustrates the point— to prevent a major firm from relocating across the Potomac, Maryland offered a multi-million dollar incentive package, mostly in the form of property tax abatement. According to Brunori [1999]:

The rules of the game allow a company to hint at the possibility of relocating; in return, the home state responds by throwing money at it. The rules are designed to provide companies with incentives to move or to stay put. But they provide other, less palatable incentives as well. Hundreds of companies have taken advantage of a system that allows just the threat to leave, or the promise to come, to reduce their tax burden.

From the point of view of the economy as a whole, such activities are an inefficient use of resources.

Comparison of Property Tax Abatements

In spite of the unresolved issues of effectiveness and efficiency, property tax abatements are common throughout the region surrounding Kansas. The widespread use of tax abatements demonstrates a point made by Youngman [1998]:

There is little evidence that the avalanche of serious and thoughtful economic studies has slowed or impeded interstate tax competition. Nor have warnings of

a collective 'race to the bottom' demonstrably affected the political calculus of advantage to be gained from claiming a new high-profile employment site.

Perhaps some of the popularity of property tax abatements among state and local decision makers stems from their widely-touted popularity with firms. Youngman [1998] quotes the leader of (then) Coopers & Lybrand's Economics Incentives Practice, commenting on the results of a survey of firms:

It is interesting to see that up-front incentives such as abatements or credits rank above concerns about actual tax rates. I have found that companies enjoy negotiating for and receiving special concessions....In this very mobile society, companies often look no further than the next 10 years. They find immediate benefits far more attractive than low tax rates. (quotation from Betty McIntosh, "Economic Incentives Key in Relocation Decisions, Says Coopers & Lybrand," *State Tax Notes*, Aug. 7, 1995, p. 411)

All states in the region except Nebraska offer significant property tax abatements. The percentage of a tax abatement and the requirements for eligibility vary widely from state to state. Some state governments limit abatements to state-designated enterprise and urban redevelopment zones. Other states allow abatements to be granted at the discretion of local governments regardless of enterprise zone status. Property tax abatements may be targeted to particular industries such as manufacturing, or they may be more general, extending to services, wholesalers, and retailers. Specifics of property tax abatements are presented below.

Kansas

Kansas allows local governments to abate up to 100 percent of property tax liabilities for 10 years for new and expanding industries. These "economic development" abatements are limited to property used in manufacturing, research and development, and warehousing. Kansas law also allows most property financed with industrial revenue bonds (IRBs) to be exempt from local property taxes for up to ten years, regardless of the industry of the firm making the investment. Taxes may be abated on land, buildings, improvements, machinery, and equipment. In Kansas, communities must perform a benefit-cost analysis before granting abatements. However, there is no requirement that abatements be limited to situations for which the benefits exceed the costs.

In 2000, the amount of property exempted from taxation in Kansas totaled almost \$600 million under the economic development abatement provisions and almost \$2 billion under the industrial revenue bonds provision. The economic development exemptions alone amounted to over 2.4 percent of the relevant property base, with the IRB provisions exempting another 7.7 percent. It should be pointed out, however, that owners of many of the exempted properties have agreed to make "in lieu of " payments to local governments.

**Table 5-4:
Property Tax Abatements in Kansas, 2000**

Description	Appraised Value
Exempt property under eco. devo. provisions (\$mil)	573.4
Exempt property IRB provisions(\$mil)	1,896.2
Commercial and industrial real estate (\$mil)	17,015.7
Commercial and industrial machinery and equipment (\$mil)	7,495.6
Total commercial and industrial property	24,511.3
Economic development exemptions as percent of appraised value	2.3%
IRB exemptions as percent of appraised value	7.7%

Source: Kansas Dept. of Revenue, *Statistical Report of Property Assessment and Taxation: 2000*.

Colorado

Colorado makes two provisions for property tax abatements. Under the first, local governments may exempt 50 percent of the value of machinery and equipment of new and expanding businesses for four years (Table 5-5). Under the second, cities, counties, and school districts in enterprise zones may negotiate with a new or expanding firm to exempt all or part of the value added to a property over its value at the time the enterprise zone was designated. According to administrators in several of Colorado enterprise zones, the incentives are used “sometimes but not always.” The quality of jobs provided is a criterion that local governments use to help make abatement decisions.

Iowa

Under 1994 legislation, Iowa offers 100 percent abatements for up to 20 years on real estate for firms that meet a strict set of “quality jobs” criteria. More generally, Iowa offers a declining 5-year abatement on the construction of new industrial real estate. It should be pointed out that new industrial machinery and equipment is not subject to tax in Iowa.

Missouri

Missouri provides tax abatements as high as 100 percent for 25 years within enterprise zones and blighted areas. These abatements are limited to improvements to real estate, and do not include machinery or equipment. Almost any industry qualifies for exemption in Missouri.

Oklahoma

Oklahoma completely exempts real estate improvements, machinery, and equipment for qualified new and expanding manufacturing and selected service establishments. Oklahoma stands out among the states in this study in that the abatement is an entitlement under state law rather than a local decision. The state government reimburses the localities for their tax losses. Local governments have the authority to abate property not included under the state exemption.

Effect of Abatements on the General Level of Property Taxation

Comparisons of business property taxation among the states in the region should consider two factors: 1) the effective tax rates on commercial and industrial real estate, machinery and equipment, and inventories; and 2) the probability of property tax abatement. With respect to the first factor alone, Kansas property taxes appear high, particularly for firms with a large percentage of their assets in machinery and equipment. However, Kansas property tax abatements for new and expanding firms are among the most generous in the region. Many Kansas communities favor the use of abatements, although not necessarily at the 100 percent level. This allows new or expanding Kansas industries to avoid a large percentage of the property tax burden. The net impact is to shift property taxes onto mature firms and households.

Summary

Property taxes provide an essential source of local revenues for all of the states examined by this study. Historically, Kansas has placed greater reliance on the property tax as a share of state and local tax revenue than the average for the U.S. or the region. That reliance on the property tax has declined due to changes in Kansas school finance initiated in 1991.

Kansas property tax rates per dollar market value of residential property are in the mid-range for the region, and have declined substantially since 1991. Tax rates on commercial and industrial real estate (before any special abatements are applied) are near the high end for the region, but have also declined since 1991. Tax rates on machinery and equipment are generally the highest or second highest in the region and have risen somewhat since 1991 due to changes in the assessment ratio.

Property tax abatements are a frequently-used tool for economic development, despite concerns about their effectiveness and efficiency. Kansas tax abatements are very generous: Kansas allows abatements of up to 100 percent for 10 years on most types of business property and for most industries. In Kansas, as in most states, the decision to grant an abatement is made locally. While Kansas has a requirement for cost-benefit analysis of abatements, there are no absolute standards for whether the abatement should be granted.

**Table 5-5:
Property Tax Abatements and Exemptions**

State	Extent of Tax Abatement	Eligibility Requirements
<i>Colorado</i>	Within enterprise zones, counties and cities may make "incentive" payments to firms based on the increase in value of real and personal property due to a new or expanding business. In no case may the incentive exceed the difference between the current property tax liability and the tax liability of the same property in the year the enterprise zone was established.	Must be a qualified new or expanding business facility located in enterprise zone. To qualify as an expanding business, the expansion must result in 10 new employees or an increase in employment of 10 percent, whichever is smaller.
	Regardless of enterprise zone location, counties, cities, and school districts may make incentive payments to firms based on their personal property tax liability, not to exceed 50 percent of the tax liability for 4 years.	Must be a qualified new or expanding business as above.
<i>Iowa</i>	Local governments are allowed to abate local property taxes on value added to industrial real estate. Maximum abatement: YR 1: 75% YR 2: 60% YR 3: 45% YR 4: 30% YR 5: 15%.	Local option abatement limited to new construction of industrial real estate, research service facilities, warehouses, distribution centers. Note: equipment and machinery not taxed.
	Communities may exempt 100% of value added to real property associated with job creation for up to 20 years for firms that qualify for New Jobs and Income Program.	The business must qualify under the Iowa New Jobs and Income Program (See Table 3-6). To generalize, the firm must offer high wages and substantial employee benefits. Retail firms do not qualify.
<i>Kansas</i>	Local option to exempt all or any portion of buildings, land, added improvements, and machinery and equipment for new or expanding firms. Exemptions last for no more than 10 years after opening of new business or completion of expansion.	Abatements limited to property of new or expanding businesses used for 1) manufacturing; 2) research and development; or 3) storing goods or commodities which are stored or traded in interstate commerce. Other qualification guidelines vary across localities.
	Property financed with economic development revenue bonds may also be exempted for up to 10 years.	Effective January 1, 1995, retail firms are prohibited from receiving property tax exemptions under the revenue bond provisions. Other qualification guidelines vary across localities.
<i>Missouri</i>	Urban Redevelopment Abatements: In order to entice development into the area, the city may grant up to, a 25-year real property tax abatement in exchange for the redevelopment of the area by the Redevelopment Corporation. For the first 10 years, the abatement is generally 100 percent. For the next 15 years it ranges from 50-100 percent.	The real property must be located within a blighted area of a Missouri city and owned by a Redevelopment Corporation. The city determines that an area is blighted based on declining property values, vacancy rates, obsolescence of structures, and other criteria. Redevelopment corporations may be organized to make improvements to the blighted area.

State	Extent of Tax Abatement	Eligibility Requirements
<i>Missouri cont.</i>	<p>Under the Missouri Enterprise Zone program, improvements to real property may be exempt from all or part of property tax payments. No exemptions may be granted for a period of more than 25 years from the date that the enterprise zone was first approved</p> <p>In enterprise zones, qualified improvements to real property receive a 50 percent, 10-year property tax exemption from all local governments.</p>	<p>The firm must create and maintain at least 50 new jobs with at least 35 hours per week employment at the new or expanded facility.</p> <p>The improved properties must be located in an enterprise zone, and must be used for assembling, fabricating, processing, manufacturing, mining, warehousing or distribution (no minimum job requirement for the 50 percent, 10-year exemption).</p>
<i>Nebraska</i>	<p>15-year tax abatement for turbine-powered aircraft or jets, mainframe computers, and for machinery, equipment, and other personal property (not real estate) used in agricultural processing.</p>	<p>The firm must qualify under the Employment and Investment Growth Act (See Table 3-6). The firm must hire 100 new full-time equivalent employees and must invest at least \$10 million For the agricultural property abatement, the \$10 million investment must be located at a single site.</p>
<i>Oklahoma</i>	<p>Qualifying manufacturing facilities receive a state-mandated 100 percent exemption from property tax for 5 years on new or expanded facilities. Included in the exemption are land, buildings, improvements, structures, machinery, equipment, and other personal property used in or on a manufacturing site. For expansions, the exemption applies only to the increase in property taxes attributable to the expansion.</p>	<p>There must be an increase of at least \$250,000 in payroll or an increase of at least \$2 million while maintaining payroll (effective 1-1-2000). Facilities must offer basic health care plans. Investments over \$200 million may qualify without meeting employment criterion.</p> <p>"Manufacturing facilities" means facilities engaged in the mechanical or chemical transformation of materials or substances into new products. Also included are:</p> <ul style="list-style-type: none"> • aircraft repair, building, and rebuilding; • computer programming and services (SIC codes 7372 and 7373), provided at least 50% of gross revenues are from out-of-state customers; • data processing (SIC code 7374), provided 80% of gross revenues are from out-of-state.
	<p>Local governments have the option of providing exemptions for local property taxes, provided that there is written agreement among the affected taxing units. The exemption is allowed on new investment only. Exemptions extend for 5 years, extended to 6 years in enterprise zones.</p>	<p>All industries except for retail, hotels, and motels may qualify. However, firms that qualify for the state-mandated manufacturing incentive described above are not eligible for the local incentive.</p>

Sources: Commerce Clearing House. *Business Incentive Guide*. Information also provided by individual state agencies and individual state statutes.

CHAPTER 6: UNEMPLOYMENT INSURANCE AND WORKERS COMPENSATION

Introduction

For most firms, labor costs constitute the single largest operating expense. In addition to wages, which are discussed in Chapter 7, total labor costs include benefits, social security and other federal taxes, and two important state-mandated programs: unemployment insurance and worker compensation. Firms are legally obligated to participate in unemployment insurance and worker compensation; hence, this study treats them as if they were taxes. Together, these two charges add about \$2.90 for every \$100 in labor costs for private industry wages and salaries in the U.S.²³ The charges vary substantially by industry and by state.

Unemployment Insurance

Unemployment insurance compensates workers who are unemployed through no fault of their own, but who are willing and able to work. Employers pay both federal and state taxes to fund unemployment insurance, but the state tax is by far the larger. The federal government establishes broad regulations for the system, while the details are state-specific. Federal regulations exist to ensure that reserves are adequate to maintain the solvency of the state programs. The states define the fundamentals such as employee eligibility rules, rates, tax bases, and benefit provisions. Taxes are collected from employers and placed in a state trust fund from which benefits are drawn.

Four major factors affect the overall level of unemployment insurance rates in a state: average benefits; duration of benefits; unemployment claims; and trust fund balances. We examine the impact of each of these factors separately; that is, assuming that other factors are equal.

- The average benefits paid to an unemployed worker. If all other factors were equal, states with higher weekly benefits would have higher unemployment insurance rates.
- The duration of the benefits payments. The longer unemployed workers are eligible for benefits, the higher will be the rates necessary to support these benefits.
- The percentage of the work force making unemployment insurance claims. Again, the higher the “draw” against the insurance fund, the higher will be the rates necessary to assure solvency.

²³ In the first quarter of 2001, wages and salaries averaged \$16.07 per hour for private sector employees. Workers’ compensation averaged \$0.34, while combined state and federal unemployment insurance averaged \$.12. U.S. Bureau of Labor Statistics, “Employer Costs for Employee Compensation,” March, 2001.

Trust fund balances. States with a high initial balance can weather periods of high unemployment claims without dramatically increasing rates.

The unemployment insurance tax rate assigned to an individual employer depends both on the firm's own unemployment experience record and on state conditions. Each firm accumulates a contribution-benefit balance based on what it has paid into the fund in relation to the benefits its previous employees have drawn. Firms with positive balances are charged relatively low rates in comparison to firms with negative balances. New firms with no experience are charged a "new employer's" rate which, in most states, depends on the industry in which the firm operates. Each state has a wage limit, referred to as the taxable wage base, beyond which unemployment taxes are no longer collected on behalf of an individual employee.

Table 6-1 provides a comparison of state unemployment insurance systems. A key indicator of the burden of the tax on employers is the average collection per \$100 payroll. For 2000, Oklahoma had the lowest collection rate in the region. This is due primarily to a system of reduced rates which Oklahoma put in place until the end of 2001, in order to draw down its trust fund balance. Kansas had done the same in the late 1990s by placing a moratorium on unemployment taxes for approximately 44,000 Kansas businesses with positive unemployment compensation balances. For three years, effectively only new and negative-balance employers were making payments. However, the moratorium ended in 1999 and the Kansas trust fund balance per employee was much closer to the national average in 2000 than it had been previously in the decade. Annual benefits per covered employee (\$150) still exceeded annual collections (\$124) in 2000, so the trust fund balance was still declining, but only at a very small rate.

Another key indicator is the current tax per \$100 payroll: the average tax rate for all employers. This rate should be viewed with caution since it does not take into account special tax moratoria such as the one recently experienced in Kansas and continuing in Oklahoma. Table 6-1 shows the average Kansas tax rate is currently fairly high compared with most states in the region, and somewhat above the national average.

The condition of state unemployment systems varies considerably across states. With the exception of Missouri and Kansas, all of the trust funds in the region could sustain the current level of benefits for about 40 or more months without additional tax inflows. Kansas could sustain its level for about 34 months. Missouri has fewer than 18 months remaining in its UI trust fund. The national average is about 32 months.

Kansas has relatively large payouts per employee and a moderate trust fund balance. It is not unlikely that to sustain its current level of benefit growth some mild rate increases could be needed in the coming years.

**Table 6-1:
Unemployment Insurance Benefits and Net Worth, 2000**

State	Covered Empl. (1000)	Weekly Benefit (\$)	Benefits Paid per Covered Empl. (\$)	Collections per Covered Empl. (\$)	Collection s per \$100 Payroll (\$)	Tax per \$100 Payroll (\$)	Trust Fund Balance/ Covered Empl. (\$)	Months Remaining ¹
Colorado	2,111	261	77	91	.29	.20	364	60.2
Iowa	1,421	243	170	130	.58	.70	532	45.4
Kansas	1,280	250	150	124	.46	.60	358	33.9
Missouri	2,614	191	138	95	.37	.40	147	17.9
Nebraska	864	193	72	56	.26	.20	188	39.3
Oklahoma	1,394	218	88	37	.17	.10	392	61.7
US Average	127,491	224	172	164	.57	.50	392	31.6

¹ "Months Remaining" data are from the fourth quarter of 2000.
Source: U.S. Department of Labor, *UI Data Summary*, March 2001.

Workers Compensation

Workers compensation laws provide benefits to injured workers or to families in the event of a worker's death. States require that firms buy insurance to provide compensation payments. Insurance is supplied by private companies. The National Council on Compensation Insurance (NCCI), an industry group, performs actuarial work and suggests industry-specific rates for most states. In the past, rates suggested by NCCI were often approved by the states as "monopoly" rates that all insurance firms would charge. But increasingly, these NCCI rates only serve as guidelines in a market where actual rates are decided by competitive firms.

Several factors determine the workers compensation rate schedule for a state. The amount of benefits paid to injured workers, decided by state law, exerts a primary effect. So does the administration of workers compensation law: what is considered a total disability in one state might not be considered so in another. Other factors include the safety records of various industries and occupations within the state and state regulations that limit rate increases. As mentioned above, workers compensation has been increasingly deregulated. States have started to allow price competition among firms, encouraging firms to keep administrative costs low. Both Kansas and Missouri have been a part of this trend. Within a single state, the rate paid by an individual firm also depends on firm-specific factors as well as on industry and occupation. A firm's payments are modified depending on its individual safety record and on whether it qualifies for a volume discount.

The best comparative data on workers compensation systems comes from a private actuarial firm, Actuarial and Technical Solutions.²⁴ The firm constructs a measure of average benefits and average costs for each state, and then indexes them to nationwide norms (Table 6-2). In other words, the data show the ratio of costs or benefits in a state to those in the nation.

Comparisons of workers compensation benefit and cost structures across states presents a challenge. Raw data on benefits and costs co-mingle two effects: the effect of differences in state policy and the effect of differences in state industrial structure. For example, a state that has a concentration of workers in dangerous industries is likely to have very high average premiums per worker. This reflects nothing about state policy; it simply reflects the underlying risks in the industry. The data provided by Actuarial and Technical Solutions have been adjusted for industry mix and hence reflect real differences among states.

The index of benefits presented in Table 6-2 reflects differences in wage rates across states and differences in state policies determining how much a worker can recover and how long a worker can claim benefits. In 2001, benefits in Kansas were about 16 percent below the national average. In contrast, benefits in Colorado, Iowa, and Nebraska exceeded the national average.

Table 6-2:
Workers Compensation Comparative Costs (adjusted), 2001

State	Index of benefits	Index of costs
Colorado	1.32	1.24
Iowa	1.06	0.76
Kansas	0.84	0.94
Missouri	0.74	1.09
Nebraska	1.07	0.84
Oklahoma	0.87	1.44
US average	1.000	1.000

Source: Actuarial and Technical Solutions. Data may be reproduced by special permission only.

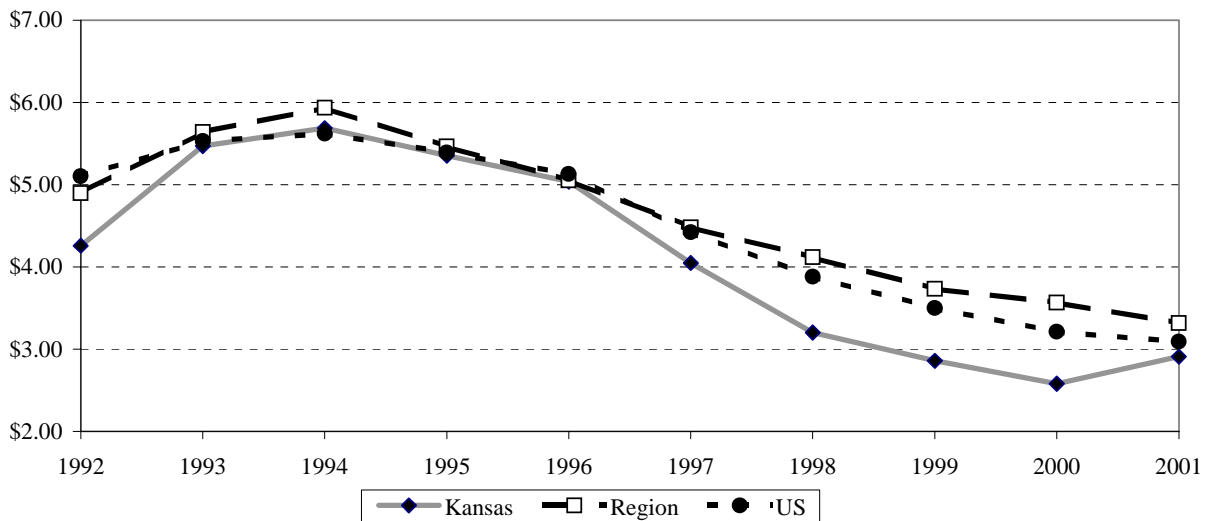
²⁴ Actuarial and Technical Solutions. *Workers Compensation State Rankings* (1992-2001).

Similarly, the index of costs compared in Table 6-2 has also been adjusted for industrial mix. It reflects the competitiveness of the workers compensation system in the state, the cost of claims, and the regulatory environment. Costs in Kansas are about the level of the national average. While not necessarily low, workers compensation costs should not present a barrier to firms wishing to locate or expand in Kansas.

In the mid-1990s, workers compensation systems came under pressure to increase their competitiveness and to lower costs. This resulted in rate structure changes in many states, including Kansas (see Figure 6-1). In 1995, the Kansas Legislature passed a comprehensive Workers Compensation Reform Act that aimed at eliminating fraud and preventing accidents. It also redefined benefit schedules for various types of injuries. In addition, the reform broke the rate monopoly in Kansas workers compensation insurance. Firms in Kansas now add their own administrative costs to the pure actuarial rates determined by NCCI in order to determine the final rates. Previously, administrative costs simply were built into basic regulated rates. The theory was that competition along with reforms such as accident prevention would lower costs.

Figure 6-1:

Workers Compensation Costs for Manufacturers, 1992-2001
(Dollars per \$100 payroll)



Sources: Actual and Technical Solutions, *Manufacturing Industry Costs and Statutory Benefit Provisions*. Data reproduced with special permission from Actuarial and Technical Solutions.

Figure 6-1 traces the history of average manufacturing workers compensation rates in Kansas, the region, and the nation. Rates rose sharply in the early 1990s—more so in Kansas and the region than elsewhere. Then Kansas and the region were part of a nationwide movement to lower costs. Kansas especially was successful in this regard, as the figure indicates. From 1996—the year in which rates for Kansas, the region and the nation were the most similar— to 2000 when cost levels bottomed out, Kansas was able to reduce its costs by 49 percent, compared to 29 percent for the region and 37 percent for the U.S. Rates in Kansas are now fairly competitive in comparison with the national average, while rates for the surrounding states exceed the national average by about 7 percent.

Summary

Kansas offers a moderate environment with respect to unemployment insurance costs. The average Kansas employer pays a UI tax rate of 0.6 percent, compared with 0.5 percent nationally and even lower rates in the surrounding states. Furthermore, given the steadily decreasing UI trust fund balance, it is likely that rates will need to be raised even higher in the next few years if the current level of benefits is to be sustained.

While the average workers compensation rate in Kansas has fallen substantially since 1994, the costs did go up slightly in 2001. However, Kansas still had workers compensation costs in 2001 that were lower than the average costs for the region by 12 percent and lower than the national average by 6 percent.

CHAPTER 7: OTHER BUSINESS COSTS

Introduction

Taxes are only one of the cost factors that influence a firm's decision about where to locate; and in fact they are usually not the most important cost factor. In nearly all cases the costs of labor, energy, land, and capital greatly outweigh the costs of taxes in determining total business costs. In this chapter, we shift the focus of the discussion to these basic business costs.

Of course, it is not the average level of costs that affects locational choice, but rather *variations* in costs across locations. However, as we shall see, variations in other business costs are likely to outweigh the tax advantage or disadvantage of business locations.

Labor Costs

Labor comprises the most important basic business cost considered in this report. Labor contributes a significant portion of the cost of producing goods and services. Direct wages and salaries account for about 15 percent of the value of goods produced in manufacturing; once social security, benefits, and other labor costs are added, the total comes to about 19.5 percent.²⁵ Of course, manufacturing also uses as an input many processed goods, which themselves are produced using labor. The direct labor ratio is even higher in typical service industries: payments to labor (excluding benefits) comprise about one-half of the value of output in administrative service industries, and one-third of the value output in data processing and computer services. [U.S. Bureau of the Census, *1997 Economic Census, Core Business Statistics Series*]. In industries such as manufacturing, intermediate product inputs such as services and materials may contribute a higher share of cost than labor, but these inputs are themselves produced using labor. After all direct and indirect costs of labor are accounted for, an absolute majority of costs in nearly every industry is accounted for by labor costs. Given their importance in overall costs, it is reasonable to assume that labor costs have a large influence on business location decisions.

To get a sense of how labor costs vary across states, we examine data on average wages and salaries per employee (Table 7-1). Wages per employee fall below the national average for all but one of the states in the region. Differences across the states are substantial: the difference between the highest wage state in the region (Colorado) and the lowest (Oklahoma) is about \$8,000 per employee, or about 32 percent. The difference between Kansas and the lowest wage state in the region is about \$2,100 per employee. The variability in wages across states is a major contributor to differentials in the total cost of doing business.

²⁵ The remainder of the value of output is due to the cost of materials and purchased services, taxes, and profits.

**Table 7-1:
Average Annual Wages, 1990 and 1999**

	1990	1999	Percentage Change
Colorado	\$22,548	\$33,586	49.0%
Iowa	18,936	26,254	38.6%
Kansas	19,838	27,478	38.1%
Missouri	21,251	29,302	37.9%
Nebraska	18,900	26,649	41.0%
Oklahoma	20,168	25,360	25.7%
U.S.	\$23,405	\$32,803	40.1%

Sources: U.S. Bureau of Economic Analysis, State Personal Income. CD ROM, Tables SA07 and SA27. Not adjusted for inflation.

Not only does the level of wages vary across states in the region, but also the rate of wage growth differs. During the 1990s, Colorado experienced growth in excess of the national average by a wide margin. Kansas, Missouri, Nebraska, and Iowa have experienced wage growth close to the national average rate, while Oklahoma has fallen far short of the national average.

A similar pattern emerges when we confine the discussion of wages to manufacturing (Table 7-2). Average manufacturing wages for the states in our study range from a high of \$43,565 in Colorado to a low of \$32,288 in Nebraska, a difference of over \$11,000 per employee. Colorado has manufacturing wages close to the national average; all other states in the region have manufacturing wages well below the national average. Kansas manufacturing wages rank in the middle of the region. Manufacturing wages in Colorado have grown at a rate far in excess of the national average. Manufacturing wages in Kansas, Missouri, and Nebraska have grown at a rate slightly slower than the national average, while Iowa and Oklahoma manufacturing wages have lagged behind.

**Table 7-2:
Average Annual Manufacturing Wages, 1990 and 2000**

	1990	2000	Percentage Change
Colorado	\$28,788	\$43,565	51.3%
Iowa	26,843	35,049	30.6%
Kansas	26,361	36,978	40.3%
Missouri	27,384	37,981	38.7%
Nebraska	23,223	32,288	39.0%
Oklahoma	26,738	33,088	23.8%
U.S.	\$29,230	\$41,896	43.3%

Source: U.S. Bureau of Economic Analysis, State Personal Income CD ROM, Tables SA07 and SA27. Not adjusted for inflation.

What do state average wage levels represent? Does the large difference in state average wage levels between Colorado and Oklahoma really mean that a Colorado worker is paid more than her exact counterpart in Oklahoma? Or does it mean that Colorado specializes in industries where high wages reflect high skill demands? Average wage levels can be decomposed into two parts: a “pure” wage effect and an industry structure effect. Estimation of the pure wage effect requires three separate sub-calculations:

- calculation of total payroll in the state for all employees;
- calculation of how large the total payroll in the state would be if all current workers were paid at the national wage for their industry instead of the prevailing state wage;
- comparison of actual payroll in the state with the hypothetical payroll calculated above.

As shown in Table 7-3, these adjustments make small changes to state average wages, generally in a downward direction. Column 2 in Table 7-3 shows the simple ratio of state average wages to the U.S. average wage. Column 3 isolates the pure wage effect. Take, for example, the case of Kansas. After adjusting for the composition of industries, the corrected figure for Kansas shows wages to stand at 82.3 percent rather than 83.8 percent of U.S. wages. Isolation of the pure wage effect has different impacts on different states, so that it potentially could change their competitive rankings. From the viewpoint of an employer who is considering making an investment, the pure wage effect gives a better indication of what the employer’s costs might be at different locations.

**Table 7-3:
Comparison of State Average Wage to U.S. Average Wage, 1999**

State	Unadjusted Ratio (%) State to U.S.	Pure Wage Ratio (%)
Colorado	102.4	101.6
Iowa	80.0	79.4
Kansas	83.8	82.3
Missouri	89.3	88.2
Nebraska	81.2	80.8
Oklahoma	77.3	76.7
U.S.	100.0	100.0

Sources: U.S. Bureau of Economic Analysis, State Personal Income CD ROM, Tables SA07 and SA27; U.S. Bureau of Economic Analysis web site, table SQ5.

For Kansas, wage rates offer a competitive advantage. Annual wages for all industries in Kansas average \$27,478 per employee, significantly below the national average (\$32,803) and in the mid-range for states in the region. These wage comparisons hold true even after isolating the effects of industry structure.

It is important to note, however, that labor costs are affected by labor productivity as well as by wage rates. Ideally, comparative business cost studies would make adjustments for productivity. That has not been done in any studies we have reviewed. Measuring productivity appropriately would be a major research project in itself. We will assume that productivity is constant across states in the region. It is known from previous research that regional labor productivity is related to quality and level of education. Because Kansas has levels of educational attainment that are above average for the nation, we believe that ignoring productivity will tend, if anything, to understate Kansas's competitive advantage.

Energy Costs

Energy is an important business input, particularly in manufacturing industries. According to the most recent data available, [U.S. Bureau of the Census, *Annual Survey of Manufactures, 1999*], manufacturers spent \$65 billion on electricity and fuel; this constitutes about 1.6 percent of the value of output. For some industries, the ratios are much higher; the primary metals industry spent close to five percent of the value of output on energy costs in 1999.

**Table 7-4:
State Energy Prices**

State	Electricity 2000 (cents per kwh)		Natural Gas 1999 (\$ per 1000 cubic ft.)	
	<i>Commercial</i>	<i>Industrial</i>	<i>Commercial</i>	<i>Industrial</i>
Colorado	5.5	4.4	4.43	2.82
Iowa	6.3	3.7	4.79	3.98
Kansas	6.1	4.4	4.98	2.95
Missouri	5.2	4.2	5.47	4.42
Nebraska	5.1	3.4	4.14	3.38
Oklahoma	5.0	3.5	5.11	3.52
Region	5.4	3.8	4.79	3.62
U.S.	6.9	4.2	5.33	3.10

Sources: U.S. Energy Information Administration, Department of Energy, *Natural Gas Annual 1999*; U.S. Energy Information Administration, Department of Energy, "Estimated U.S. Utility Average Revenue per Kilowatt-hour to Ultimate Consumers by Sector, Census Division, and State" (Table 55).

Energy prices show substantial variation across states (Table 7-4). For example, average industrial electricity rates for the states in this study range from 3.4 cents per kwh (Nebraska) to 4.4 cents per kwh (Kansas and Colorado), a ratio of about 1.3 to 1. Average industrial gas rates range from \$4.42 per thousand cubic feet (Missouri) to \$2.82 (Colorado), a ratio of almost 1.6 to 1.

Our discussion focuses on industrial energy prices, since they apply to manufacturing, and manufacturing tends to be more energy-intensive than service industries. Kansas ranks second lowest in the region for industrial gas prices, but tied for highest in the region in terms of industrial electric prices. The Kansas price for gas is well below the national average; the Kansas price for electricity is about equal to the national average. It should be pointed out that energy prices vary within a state as well as across states; therefore, comparisons of averages may not accurately reflect the cost differentials between specific locations within the states.

**Table 7-5:
Construction Cost Indexes, 2000**

State	Cost Index	State	Cost Index
Colorado	.92	Missouri	.97
Iowa	.89	Nebraska	.86
Kansas	.89	Oklahoma	.82
U.S.	1.00	Region	.89

Source: R.S. Means [2000].

Construction Costs

We also investigated the cost of constructing a new facility. Data from R.S. Means [2001] show construction costs indexes for major cities in all states. (See Table 7-5.) These indexes are based on local materials and construction labor prices. An index of 1 indicates construction costs equal to the national average. All of the states in the region have cost indexes below the national average. Indexes for Kansas cities range from .82 to .97, and average .89. Kansas offers construction costs well below the national average and in the mid-range for the region; Kansas is quite competitive in terms of this production factor.

Land

For this study, we made use of data on land prices from a recent survey of industrial and commercial realtors [Society of Industrial and Office Realtors, 2000]. The data were collected from real estate professionals in approximately 150 markets in metropolitan areas throughout the country. A range of prices (high, low, and average) was reported for prime industrial sites in each market. Where available, data were listed separately for central city versus suburban areas.

To summarize the data, we grouped the markets into nine regions as defined by the U.S. Bureau of the Census. We used the mid-range value for improved industrial sites with a size of about 10 acres. We calculated the average price for each region, reported in Table 7-6 below. We also calculated a nationwide average. It should be pointed out that land is not a standard commodity, so there may be differences in the quality of the sites reported by the survey respondents.

Cities in the West North Central region, which includes Kansas, Nebraska, Iowa, and Missouri, and a few other states, generally reported land prices that are at or below the national average. Land prices in this region average \$1.84/sq. ft. in central city locations, compared with a national average of \$4.60/sq. ft. For suburban locations, regional prices

average \$2.55/sq. ft., versus \$3.34 for the nation. The survey includes two Kansas locations: the Kansas City metro area and Wichita. In Kansas City, improved suburban sites go for about \$2.00/sq. ft., while improved suburban sites sell for about \$0.75/sq. ft. in the Wichita area. The state weighted average is constructed using inventories listed in the survey as weights.

In summary, land prices in Kansas City are typical for the region. They are well below the U.S. average. Land prices in Kansas should be a positive factor for firms contemplating a move or an expansion from another region. They should be a neutral factor for firms considering a move or expansion within the Midwest.

Table 7-6:
Industrial Land Prices by Region, 2000
(price per square foot)

State	Central City	Suburban	Weighted Average
New England	12.10	5.14	5.99
Mid-Atlantic	16.04	2.40	6.35
South Atlantic	2.62	4.33	4.09
East N. Central	5.11	2.96	3.54
West N. Central	1.86	2.75	2.46
–Iowa	2.39	1.59	2.00
–Kansas	1.66	2.70	2.04
Kansas City	1.65	2.85	2.25
Wichita	1.00	3.00	1.17
–Missouri	1.83	3.14	2.47
–Nebraska	1.25	2.73	2.11
East S. Central	1.62	2.16	2.05
West S. Central	2.44	2.28	2.31
–Oklahoma	n/a	1.79	n/a
Mountain	3.97	2.58	3.47
–Colorado	3.50	2.71	2.87
Pacific	8.87	10.32	9.61
U.S. average	6.98	4.10	5.00

Source: Society of Industrial and Office Realtors 2000 *Comparative Statistics of Industrial and Office Real Estate Markets*. Region and state averages calculated by PRI.

Other costs

For a significant portion of business costs, comparative data are either not available, or are hard to aggregate meaningfully. These unmeasured costs mainly cover business services and raw and finished materials. Each of these categories refers to outputs of other production and distribution processes. Raw materials prices are generally determined in national markets and do not vary much across states that are close to each other. Business services and finished materials employ processes that make use of the same input factors—labor, energy, and land—whose costs are discussed in this chapter. Moreover, under competitive conditions, the prices of services and finished materials are determined by the prices of land, labor, energy and raw materials that went into them. Therefore, the prices of basic factors described in this chapter are fairly good indicators of the total cost of business, excepting taxes and capital goods.

Summary

In general, Kansas offers a competitive business cost climate. Labor costs, the most important of the costs that we consider, are in the mid-range for the region and are much lower than for the nation as a whole. Industrial gas prices are well below the national average, while industrial electricity prices are approximately equal to the national average. Land costs in the entire region as a whole are well below the national average. For specific Kansas locations, Wichita stands out as having some of the lowest land costs in the nation.

CHAPTER 8: TOTAL COST OF DOING BUSINESS

Introduction

Since 1987, the Policy Research Institute or its predecessor (the Institute for Public Policy and Business Research) has worked with Kansas, Inc. to develop and apply a cost and tax simulation model. This model provides a flexible method for comparing costs of doing business across states. It produces estimates of key variables that might affect a new firm's location decision: the cost of inputs such as labor and energy, the cost of assets such as land and buildings, and the amount of a firm's federal, state, and local taxes. In addition, the model provides a means to evaluate the cost and tax climate facing existing Kansas businesses.

It is important for Kansas to be able to track costs and taxes within the region and nation, particularly in view of its economic development plan that includes the following goal:

Create a positive, competitive business climate that encourages investment and growth [Kansas, Inc., 1997, section 3, p. 6].

The narrative then states:

The 1986 and 1993 economic development strategies explicitly rejected the goal of making Kansas a low tax state. Kansas business leaders and economic development advocates have recognized the vital importance of quality public services and the need for adequate funding for the public sector. Rather, the goal has been to achieve tax competitiveness within the region; in other words, a level of taxation that would neutralize this issue as a locational factor. The 1997 strategy re-affirms the goal of tax neutrality [section 3, p. 6].

Research on the relative costs of doing business in Kansas, and on taxation in particular, provides a way for the state to assess its progress towards this goal and to identify areas in which policy adjustments could improve the business environment.

The model can be used in two ways: to compare overall taxes and costs in Kansas with those prevailing in other states; and to estimate the impact of proposed tax changes. This chapter compares Kansas with nearby states, and also examines the likely effects of a (potential) policy change designed to eliminate property taxes on machinery and equipment.

Methodology

The PRI tax and cost simulation model takes a “hypothetical firm” approach (see Appendix 4 for a comparison of hypothetical firm models used in various states). Profiles of firms in several industries are developed based on industry average costs for capital, labor, and other inputs. The firms are then “placed” in each of several states, where they become subject to 1) the state’s business tax rates, and 2) the prevailing costs for labor, energy, land, and other factors in the state.

The model is structured to allow two different types of scenarios. The first type, referred to as the “full model,” allows taxes and other business costs to vary simultaneously across states. This situation gives a picture of the overall business climate in a state. The other type of scenario, referred to as the “partial model,” isolates the impact of business taxes by holding other costs constant (at their regional average levels). The partial model scenarios are useful for distinguishing the effects of the particular tax structures of the states from overall effects of taxes plus business costs.

The model distinguishes between the situations of a new firm and an on-going concern or “mature firm.” The new firm is eligible for numerous tax incentives from state and local governments that are available for creating new jobs or making new investments. The ongoing concern does not receive tax incentives, and hence faces the full impact of the state’s tax structure. Note that an expanding firm could be modeled as a combination of a new and a mature firm.

Industries examined by the PRI model

This version of the model includes five industry types: two manufacturers and three service firms. The first manufacturer is an aggregate of industries that pay low wages and use low-to-moderate amounts of capital equipment. Examples would include furniture manufacturing, bakery products, and poultry processing. The second manufacturer is an aggregate of high wage, highly-capital-intensive industries. Examples are pharmaceuticals and aircraft engines. Most other manufacturing industries can be viewed as being intermediate between these two cases (partly because wages and capital are the most important determinants of taxes and cost, and also because wage rates in manufacturing industries are highly correlated with capital intensity).

The service industries include computer services, administrative back offices, and research and development (R&D) firms. The R&D industry is moderately capital intensive, while the other industries are less so. Estimates of capital intensity and average wages for the five industry types are shown in Table 8-1.

**Table 8-1:
Average Wages and Capital per Employee by Industry**

Industry Name	Wages	Value of Structures	Value of Equipment	Total Depreciable Capital
Low Wage, Low Capital Intensity Mfg.	\$26,600	\$18,000	\$19,000	\$37,000
High Wage, High Capital Intensity Mfg.	51,800	90,000	136,000	226,000
Computer Services	57,200	16,800	24,200	41,000
Administrative Offices	40,500	26,300	9,700	36,000
Research and Development	58,700	44,100	25,900	70,000

Source: Calculations by PRI.

Our major data sources for estimating capital, wages, and other costs were:

1. U.S. Bureau of the Census, *1992 Census of Manufactures, General Summary* (for book value and employment- some information on book value has not been updated);
2. U.S. Bureau of the Census, *1999 Annual Survey of Manufactures* (for employment, value added, and wages);
3. U.S. Bureau of Economic Analysis, *Fixed Reproducible Tangible Wealth*, data on CD ROM, 1999 (historical and current cost by two-digit SIC code for machinery and structures);
4. U.S. Bureau of the Census, *1997 Economic Census Core Business Statistics Series, Advance* (for data on service industries including employment, wages, value added, and sales);
5. U.S. Bureau of Economic Analysis, *Input Output Tables of the United States, 1997*; and
6. Data on new call centers and administrative service centers from the business magazine *Plants, Sites, and Parks*.

Representative firm profiles

The basic structure of the PRI tax model is fairly straightforward. A profile is developed for a representative firm in each industry listing sales, costs, and assets. The profile is based on industry averages for the U.S. Once the firm profile is in place, the model proceeds to calculate the federal, state, and local taxes the typical firm would incur.

**Table 8-2:
Cost Profile Example**

Sales, Costs, and Assets	Manufacturing High wage High capital intensity
AVERAGE ANNUAL SALES	\$466,897
AVERAGE ANNUAL COSTS (excl. taxes except Soc. Sec.)	\$390,175
Payroll	43,944
Production	25,510
Other	18,434
Employer's Soc. Sec. Payments	3,362
Employee Benefits	5,182
Intermediate Goods and Services	316,552
Materials	207,525
Transportation	13,481
Utilities	18,161
Electricity	7,162
Gas	5,472
Water	2,779
Communications	1,184
Other	1,565
Business Services inc. Advertising	23,970
Other	53,415
Depreciation (annual average)	27,326
Repair and Rental Payments	2,583
Other Costs or Revenue (-)	(8,774)
 SALES MINUS COSTS (profit before taxes)	
 ASSET COSTS (excluding sales taxes)	
Land	\$10,416
Buildings	\$81,360
Machinery	\$136,000
Inventory	\$42,021

Note: Costs in this table are based on regional average prices for land, labor, construction, and utilities. In contrast, the capital intensity numbers in Table 8-1 are based on national average prices.
Source: Calculations by PRI.

Table 8-2 shows an example of such a profile, constructed for a high wage, high capital intensity manufacturer. All dollar amounts are shown in per-employee terms. Costs are in annual terms, and both costs and assets are adjusted to real 2000 prices. The costs in

the sample profile reflect U.S. average prices for labor, land, and other purchases. However, the actual scenario incorporates local cost adjustment factors for each state. The adjustments for local costs assume that the firms use the same quantity of each input (labor, energy, etc.) regardless of price.²⁶

Tax and Cost Data and Calculations

The Tax Simulation Model uses information from the cost and asset profiles to calculate the taxes that would be paid by typical firms in each state. The model relies on a database of state and local tax rates and a complete description of the base to which each tax applies. The model is based on the most up-to-date information available about state tax rates and incentives. All sales tax and corporate tax rates are for 2001. For the most part, statewide estimates of property tax rates are based on 2000 data.

In essence, the model fills out federal, state, and local tax forms for each representative firm and calculates the firm's liability for each type of business tax. The model is careful to account for the feedback effects among taxes. For example, the model incorporates the "federal offset" which occurs when state and local taxes are deducted from federal taxable income. Similarly, there is a state offset for local taxes.

All calculations are carried out for a 20 year period. Valid cross-state comparisons of state tax structures require the examination of a fairly long time period. Reasons for this include state-by-state differences in the length of time for which incentives are offered and in the length of time for which unused credits can be carried over. In order to summarize the 20 year time period, present value calculations are made. The model assumes a discount rate of 10 percent for capitalizing profit profiles into a present value. An annualized average is then calculated.

Alternative scenarios

The Cost and Tax Simulation Model is designed to allow the user to make alternative assumptions about the situations of the representative firms. Major assumptions are of two types, concerning:

1. the degree to which the firm receives tax credits and abatements; and
2. the importance of cost differentials other than those related to taxes.

²⁶ This assumption is known as "Leontief technology." An alternative assumption, known as "Cobb-Douglas," which would allow for substitution in the input mix as prices vary, may theoretically be more appropriate. However, other business cost studies have uniformly used the simpler Leontief technology.

Eligibility for incentives: new versus mature firms

Whether a firm receives tax incentives can make a large difference in its bottom-line tax bill. The tax situation faced by a new firm in a particular state may share little with the situation of a mature firm. Furthermore, the situation of the new firm may bear little relation to the underlying tax rates that prevail in a state. Hence the results presented in this report contrast two alternative sets of assumptions.

In one scenario (the "new firm" scenario), a firm is assumed to qualify for all incentives allowed for new firms in their respective industries. The firm is assumed to locate in an enterprise zone in the states where enterprise zone credits exist. In states which allow 100 percent property tax abatements, the firm is assumed to receive the full tax break. This scenario approximates the situation of a "footloose" firm which can shop for the best incentive package available in the region.

In the alternative scenario (the "mature firm" scenario), the firm is offered no special tax credits or abatements. This scenario is intended to represent the situation of a mature, established firm which is currently neither expanding nor changing locations. The mature firm pays taxes in line with the basic tax structure of the state in which it is located.

Non-tax effects: partial versus full model

The second set of assumptions concerns the extent to which differences in non-tax costs are built into the model. The appropriate set of assumptions depends on the type of question the user is trying to address. If the user is interested in broader issues of cost competitiveness, an extended model which builds in local cost adjustment factors for labor, utilities, and other key inputs is more valid (see Tables 8-3 and 8-4). This approach provides an estimate of taxes and costs as they exist in the "real world."

On the other hand, if the user is interested in distinguishing differences in state tax structures, a model which holds all other costs constant across locations is suitable (see Tables 8-5 and 8-6). This approach uses a pure simulation contrary to fact, intended to provide a particular decomposition of tax effects. (The costs are held at regional average levels.)

Results from both approaches are presented in this report. It should be noted that the first approach reflects actual-world feedback effects between costs and taxes. For example, suppose that a firm locates in an area where land is expensive in comparison to other states. Then the full version of the model will indicate high property taxes for the firm, since the property tax level reflects not only the tax rate, but also the land value. Similarly, income taxes in the full model reflect the impact of costs on the taxable income base.

Detailed model assumptions

The situations of representative new and mature firms are defined by a detailed set of assumptions. Some assumptions are shared in common, while others distinguish the two alternative firm types.

Assumptions applying to all firms

1. Firms in each industry are assumed to hire competitively 100 full-time employees.
2. Manufacturing firms are export-oriented, selling 90 percent of their product outside the state. Hence states using a using a three-factor formula will tax 70 percent of the firm's income, while states using a sales-only formula will tax 10 percent.²⁷
3. Computer services and R&D firms serve regional and national markets, but for the purposes of taxation, their income is assumed to be entirely in the state where the firm is located, and hence entirely taxable.
4. Administrative offices serve national firms. Consequently, the income tax may apportion addition amounts of the firm's nation-wide income to the state where the office locates. However, the additional amount of income apportioned will be zero in states where the firm is able to use a single-factor sales formula.
5. Prices of the firm's output are determined in national markets, so that the firm cannot pass increases in state and local taxes along to its customers.
6. As a national average, firms earn a return of 25 percent on their investment, before all taxes. State-to-state variations in taxes and costs affect the actual before- and after-tax returns on investment in each state.
7. All scenarios are calculated as annual averages over a 20-year period. During that time period, the firm's initial investment is assumed to depreciate and replacement investment is assumed to take place. Physical depreciation of machinery and equipment occurs based on a straight-line basis with a 10 year horizon in manufacturing industries, and a five year horizon in service industries. Depreciation is continuously offset by sufficient replacement investment to hold capacity constant. Buildings and land do not depreciate, although there may be maintenance costs.
8. The model incorporates the *federal income tax offset*. In other words, increases in state and local taxes generally reduce federal taxable income, and hence reduce the federal income tax liability.
9. No adjustments are made for differences across locations in labor productivity.
10. Materials prices are assumed to be the same in all locations.
11. Firms are assumed to locate in metropolitan areas. Where data are available, we have used average metro area average prices rather than pure statewide averages.

²⁷ Suppose that a firm has 100 percent of its property, 100 percent of its payroll, and 10 percent of its sales in a single state. Then 70 percent of its income will be taxable in that state under a three-factor formula ($100/3 + 100/3 + 10/3$). But only 10 percent of its income will be taxable in that same state under a sales only formula. The firm may be liable for additional income taxes in other states on the basis of its out-of-state property, payroll, and sales.

12. Results are presented in terms of profits. The 20 year stream of profits is annualized using a net present value calculation with a 10 percent real discount rate (comparable to long-run returns on stock markets).
13. Firms faced with a choice of incentives choose the most advantageous package of incentives.

Assumptions applying to new firms only

14. Firms purchase a new structure and new machinery and equipment in the first year.
15. In states which allow property tax abatements, firms generally receive the maximum property tax abatement allowed by state law.
16. Firms qualify for job and investment tax credits in states where these are applicable. In states that enhance benefits in enterprise zones, the enhanced credit level is incorporated into the model.
17. Firms qualify for enterprise zone reductions in sales taxes where applicable.
18. Replacement investment is assumed eligible for tax incentives.

Assumptions applying to mature firms only

19. Firms receive no property tax abatement.
20. Firms operate from buildings that were purchased previous to the period under analysis. They replace some of their machinery and equipment each year.
21. Firms do not qualify for job and investment tax credits or for special enterprise zone benefits.
22. Replacement investment is assumed *not* eligible for tax incentives.
23. The firm's level of physical capital is in a "steady state" – i.e., replacement investment each year is constant.

Application of the Model

The PRI model currently compares business costs and taxes in Kansas with those in five other states: Colorado, Iowa, Missouri, Nebraska, and Oklahoma. First, the model is run under "full model" assumptions, with varying non-tax costs. Next, the model is run under "partial model" assumptions, with non-tax costs held constant.

The model compares states by looking at a measure of after tax profits (or after tax returns on capital). All impacts are calculated in per-employee terms. Note that profits per employee are equal to sales minus total costs (including costs of taxes). In the "full model," low profits per employee translates into high total costs per employee, and vice versa. In the "partial model" with costs held constant, the variations in profits are due to taxes alone. Low profits per employee translate into high taxes per employee and vice versa.

Results of Scenario 1 (Table 8-3; full model, new firms)

The competitiveness of the Kansas business climate is best revealed by looking at total business costs for new and expanding firms, i.e. the kind of firms that are most likely to be making locational choices. For new firms receiving credits and abatements, Kansas appears to be a moderately-attractive business location relative to the region. Kansas profits per employee exceed the regional average for all industries in Table 8-3. Profits per employee are substantially higher in Kansas than in Colorado or Missouri, which have considerably higher labor costs. Kansas profits lag behind Nebraska, Oklahoma, and usually Iowa.

The purpose of the model is to capture the full interaction of various kinds of costs and taxes. Because of this, it is usually not possible to trace the model results back to any single factor. However, we can discuss factors which have a large influence on the results. In this scenario, the conclusion that Kansas is a moderately attractive business location is influenced by:

- moderate labor costs.
- the wide availability of property tax abatements, so that industries that use substantial amount of machinery and equipment are *not* placed at a disadvantage compared with other states in the region.
- the availability of competitive job and investment credits. Several states in the region have attractive credits; the availability of such credits in Kansas “keeps Kansas in the running.”

Since this region is relatively low in costs compared to the nation, Kansas appears to

Table 8-3:
Profits per Employee: Full Model Including Cost Variations
New Firms Receiving Tax Credits and Abatements

Location	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Colorado	\$6,327	\$38,160	\$6,338	\$5,579	\$10,334
Iowa	11,079	50,108	14,270	12,135	18,871
Kansas	10,278	47,854	13,881	11,501	18,922
Missouri	8,893	41,552	11,793	9,673	16,563
Nebraska	10,874	47,755	15,189	11,989	20,256
Oklahoma	11,671	50,206	17,118	13,797	21,866
Reg. Av. (Co, Ia, Mo, Ne, Ok)	9,769	45,556	12,942	10,635	17,578
Kansas as % of Reg. Av.	105.2%	105.0%	107.3%	108.1%	107.6%

NOTE: Under the assumptions of the full model, costs such as labor, land, and energy vary by state.

Source: Calculated by PRI.

be an attractive location from a nation-wide as well as regional point of view.

Results of Scenario 2 (Table 8-4; full model, mature firms)

This scenario looks at “mature” firms that do not receive any special abatements, credits, or other economic development incentives. When all costs (labor, energy, etc. as well as taxes) are taken into account, the model estimates that profits per employee in established Kansas firms fall above regional averages in all industries (though only marginally so in manufacturing).

As was the case for new firms, after-tax profits per employee in Kansas are above those that might be earned by similar firms in Colorado or Missouri and below those available in Oklahoma, Iowa, or Nebraska. Oklahoma’s advantages over Kansas in this scenario are overall low wages and low taxes. Iowa’s advantages are exemptions for property taxes on machinery and equipment and a single factor income tax formula which provides advantages for firms that ship goods out of state (manufacturing) and for the administrative office firm. Nebraska also has the single factor advantage.

Table 8-4:
Profits per Employee: Full Model Including Cost Variations
Established Firms Receiving No Tax Credits or Abatements

Location	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Colorado	\$6,213	\$37,564	\$6,221	\$5,591	\$10,290
Iowa	11,022	48,337	14,302	12,223	18,943
Kansas	9,781	45,395	13,554	11,046	18,185
Missouri	8,408	39,450	11,055	9,057	15,278
Nebraska	10,800	47,436	14,101	11,965	18,900
Oklahoma	11,363	49,667	16,214	13,122	21,044
Reg. Av. (Co, Ia, Mo, Ne, Ok)	9,561	44,491	12,378	10,392	16,891
Kansas as % of Reg. Av.	102.3%	102.0%	109.5%	106.3%	107.7%

NOTE: Under the assumptions of the full model, costs such as labor, land, and energy vary by state.
Source: Calculated by PRI.

Results of Scenario 3 (Table 8-5; partial model, new firms)

This scenario isolates the impact of taxes by holding all other business costs constant across states. Since in this scenario there is no variation in costs except for the tax component, lower profits mean higher combined federal, state, and local taxes, and vice-versa.

Consider a new firm that locates in Kansas and takes advantage of all available credits and incentives. Such a firm would have profits per employee very near the regional average. Since all other costs are held constant, this is equivalent to saying combined federal, state, and local taxes for the firm are about the same in Kansas as they would be, on average, for similar firms locating elsewhere in the region. When we rank the states by after-tax profits, we find that Kansas generally falls in the mid-range. However, for some industries, the gap between the high state and the low state is quite small; in such cases, rankings are not too significant.

The Kansas tax structure has advantages and disadvantages for new firms. The availability of 100 percent, 10 year property tax abatements, provides a significant tax saving to new firms. In addition, Kansas has substantial sales tax exemptions for machinery and equipment and job and investment incentives that are as generous as those available elsewhere. On the other hand, the three-factor income tax formula results in higher taxable income than in states with an alternative apportionment formula (see Assumptions 2-4 above). That Kansas profits per employee are average for the region indicates that the advantages of the tax structure for new firms in large part balance out any disadvantages.

Table 8-5:
Profits per Employee: Partial Model with No Cost Variations
New Firms Receiving Tax Credits and Abatements

Location	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Colorado	\$9,606	\$44,232	\$12,971	\$10,502	\$17,380
Iowa	10,023	48,357	12,287	10,572	16,802
Kansas	9,886	46,830	12,970	10,782	17,987
Missouri	9,754	44,494	13,237	10,762	18,205
Nebraska	9,934	45,384	13,577	10,788	18,524
Oklahoma	10,034	46,502	14,012	11,416	18,457
Reg. Av. (Co, Ia, Mo, Ne, Ok)	9,870	45,794	13,217	10,808	17,873
Kansas as % of Reg. Av.	100.2%	102.3%	98.1%	99.8%	100.6%

NOTE: Under the assumptions of the partial model, costs such as labor, land, and energy are held constant across states.
Source: Calculated by PRI.

Results of Scenario 4 (Table 8-6; partial model, mature firms)

For mature firms that receive no tax credits or abatements, with other costs constant, profits-per-employee are (depending on industry) slightly lower in Kansas than in the region on average. In other words, Kansas taxes are somewhat higher. Part of the explanation is the relatively-high Kansas property tax, particularly on business machinery and equipment. Note especially the case of the capital-intensive manufacturer. Further placing Kansas at a disadvantage is the three-factor formula used for income apportionment. Note that Nebraska and Iowa apply a sales-only formula, and hence see an advantage for the administrative office establishment (which does not sell anything in-state, but which brings payroll and property into the state) and for manufacturers.

Comparing Scenarios 3 and 4, it is clear that the Kansas tax climate is more favorable for firms starting up (or expanding) in the state than it is for on-going business concerns. This is largely driven by the property tax on machinery and equipment.

Table 8-6:
Profits per Employee: Partial Model with No Cost Variations
Established Firms Receiving No Tax Credits or Abatements

Location	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Colorado	\$9,474	\$43,606	\$12,832	\$10,511	\$17,298
Iowa	9,972	46,608	12,318	10,659	16,873
Kansas	9,387	44,359	12,625	10,326	17,243
Missouri	9,273	42,448	12,453	10,182	16,903
Nebraska	9,867	45,081	12,539	10,764	17,204
Oklahoma	9,679	45,929	12,999	10,659	17,522
Reg. Av. (Co, Ia, Mo, Ne, Ok)	9,653	44,734	12,628	10,555	17,160
Kansas as % of Reg. Av.	97.2%	99.2%	100.0%	97.8%	100.5%

NOTE: Under the assumptions of the partial model, costs such as labor, land, and energy are held constant across states.
Source: Calculated by PRI

Sources of Errors in the Model

As is the case with any economic model, the PRI Cost and Tax Model contains a number of sources of potential error. It should be emphasized that "error" does not mean "mistake." By "error," we simply mean that there is unavoidable variability in the model, or that the model is not a perfect replica of the real world. Model errors stem from four possible sources:

- C Imperfect state-level data sources. State-level data sources are responsible for the interstate variations in total costs reported by the model. As an example of error, it is likely that the data used to create state-specific measures of wages may not exactly represent the occupation mix employed by a specific industry.
- C Imperfect national-level data sources. National-level data are used to construct the firm profiles. The data are taken from a variety of sources, and inconsistencies across the data sources can be observed. We employ standard methods to resolve these inconsistencies, but errors due to the data remain.
- C Missing data. This may be the most important source of error in the model. Some data are unavailable at the state or local level. Included in our list of missing data are state-specific measures of many types of materials costs, state-specific measures of transportation costs, and, most critically, state-specific adjustments of labor productivity.
- C Modeling specification. The assumptions of the model can never be completely realistic. Our model assumes, for example, that differences in taxes and other costs across states cannot be "shifted" to the ultimate customers, and that firms cannot substitute between different inputs when prices change. Both of these assumptions are known to be false, although the practical effects may not be very important.

Because of the potential for error in the model, the interstate profit differences reported in the tables should be interpreted with caution. Although we have not completed a quantitative analysis of errors, small profit differentials in Tables 8-3 to 8-6 (say on the order of two percent) are not very significant.

It is also important to note that these estimates refer to complicated state-wide averages for metropolitan areas. There is a great deal of variability of costs within each state; in fact, variations within states are generally greater than variations across states. Therefore, these estimates are not intended as a guide to detailed business location decisions. Instead, they are a guide to average state-wide conditions that may be helpful to policymakers.

Detailed Breakdown of Taxes

Table 8-7 distinguishes the particular taxes responsible for the overall level of taxation for Kansas firms, looking specifically at the case of high capital-intensity manufacturing. (Data for the other four firm types are not shown because they lead to essentially the same conclusions.) We compare taxes in Kansas with Iowa (an example of a relatively low cost state), Colorado (an example of a relatively high cost state), and the regional average. And we dissect out the individual taxes for all four of the scenarios described above.

For the new Kansas manufacturing firm, the state income tax imposes a higher burden than any other tax. State income taxes are about three times the regional average, and are almost 10 times those found in Iowa, a “sales-only” apportionment state. Kansas taxes a greater portion of a firm's overall income than is the case in some other states in the region. The manufacturing firm is assumed to be export-oriented. Kansas typically bases the income tax for multi-state firms on in-state percentages of three factors: payroll, property, and sales.²⁸ By contrast, several other states in the region base their income tax allocations on sales only, or on a combination of sales and property. For firms with most of their sales out-of-state, the single- and two- factor formulas generally result in a lower state tax liability.²⁹

For the new firm, all other Kansas taxes are well below regional averages. The property tax imposes the second largest burden among Kansas taxes, but it is only about half of the average regional level. Indeed, the low level of other taxes (which are deductible from state and federal income taxes) is an additional cause for the high income tax.

For the mature Kansas manufacturing firm, the property tax imposes a higher burden than any other tax. The Kansas property tax is about a third higher than the regional average, and close to twice as high as the Iowa tax, but only some 80 percent of the Colorado tax. The current Kansas property tax structure creates a large differential between residential and business property (both real estate and machinery), and taxes business property at relatively high rates. For mature capital intensive firms that are ineligible for property tax abatements, this tax can be substantial.

²⁸ In Kansas, firms with a payroll factor exceeding the sum of the property factor and the sales factor may elect to use a two-factor formula. The alternative two-factor formula is based 50 percent on sales and 50 percent on property.

²⁹ Suppose that a firm has 90 percent of its property, 90 percent of its payroll, and 15 percent of its sales in a single state. Then 65 percent of its income will be taxable in that state under a three-factor formula ($90/3 + 90/3 + 15/3$). But only 15 percent of its income will be taxable in that same state under a sales only formula. The firm may be liable for additional income taxes in other states on the basis of its out-of-state property, payroll, and sales.

Table 8-7:
Taxes by Type for a High Capital-Intensity Manufacturer
Taxes per Employee

Tax	Kansas	Colorado	Iowa	Region	Kansas as % of Region
<i>Scenario 1: New Firm Receiving Tax Credits and Abatements, Full Model with Cost Variations</i>					
Federal Taxable Income	72,909	58,109	75,974	69,191	105.4%
Federal Income Tax	24,789	19,757	25,831	23,525	105.4%
State Income Tax	2,375	1,168	263	772	307.6%
Unemploy. and Workers Comp.	999	1,469	881	1,112	89.8%
Property	1,580	5,928	271	3,377	46.8%
Franchise	25	0	25	114	21.9%
Sales	701	1,188	1,897	1,926	36.4%
On Machinery and Structures	294	745	816	1,163	25.3%
TOTAL	30,469	29,512	29,168	30,827	98.8%
<i>Scenario 2: Established Firm Receiving No Tax Credits or Abatements, Full Model with Cost Variations</i>					
Federal Taxable Income	69,110	57,251	73,348	67,706	102.1%
Federal Income Tax	23,497	19,465	24,938	23,020	102.1%
State Income Tax	2,069	1,492	683	1,707	121.2%
Unemploy. and Workers Comp.	999	1,469	881	1,112	89.8%
Property	5,601	6,974	3,040	4,313	129.9%
Franchise	25	0	25	118	21.2%
Sales	736	707	1,372	1,623	45.3%
On Machinery and Structures	330	264	291	861	38.3%
TOTAL	32,927	30,108	30,939	31,892	103.2%
<i>Scenario 3: New Firm Receiving Tax Credits and Abatements, Partial Model with No Cost Variations</i>					
Federal Taxable Income	71,345	67,340	73,319	69,551	102.6%
Federal Income Tax	24,257	22,896	24,929	23,647	102.6%
State Income Tax	2,298	1,363	253	772	297.7%
Unemploy. and Workers Comp.	1,025	1,240	927	1,100	93.2%
Property	1,585	5,812	337	3,379	46.9%
Franchise	25	0	25	114	21.9%
Sales	701	1,180	1,894	1,916	36.6%
On Machinery and Structures	294	738	814	1,154	25.5%
TOTAL	29,892	32,490	28,365	30,928	96.7%
<i>Scenario 4: Established Firm Receiving No Tax Credits or Abatements, Partial Model with No Cost Variations</i>					
Federal Taxable Income	67,528	66,443	70,724	68,078	99.2%
Federal Income Tax	22,960	22,591	24,046	23,147	99.2%
State Income Tax	1,997	1,731	656	1,730	115.4%
Unemploy. and Workers Comp.	1,025	1,240	927	1,100	93.2%
Property	5,620	6,849	3,089	4,270	131.6%
Franchise	25	0	25	117	21.4%
Sales	737	706	1,371	1,623	45.4%
On Machinery and Structures	330	264	291	861	38.3%
TOTAL	32,363	33,116	30,114	31,988	101.2%

Source: Calculations by PRI.

For the mature firm, the second highest tax is the state income tax. This tax is 15 to 20 percent higher than the regional average, for some of the same reasons that were discussed above. However, that is a far cry from the 200 percent differential experienced by the new firm. And yet, the Kansas income tax on the mature firm is only a little lower than the tax on the new firm. The reasons for this discrepancy are interesting: in other states in the region, income taxes tend to be considerably higher on mature firms because of the loss of income tax incentives.

Changes Over Time

PRI and Kansas, Inc. first developed the Cost and Tax Simulation Model in 1987. The model previously was updated in 1990, 1992 (partial update), 1994, 1997, and 1999; this report reflects 2001 updates. The model has undergone many developments since 1987, but its general structure has remained the same. That is, the model develops profiles of costs and assets for a set of representative firms, and then calculates costs and taxes based on the profiles. The set of industries analyzed and the assumed characteristics of these industries has changed over time, so direct comparisons of model results from year to year are problematic. However, we are able to pick out some industries (highly capital-intensive manufacturers and less capital-intensive manufacturers) that are crudely comparable over the time period 1990-2001.

A consistent pattern in all of our reports has been that new Kansas manufacturing firms receive amounts of profit a few percent higher than regional averages. That remains true in the current report. On the other hand, measured profits in mature manufacturing firms have previously been somewhat below the regional average. That finding has been reversed. That is, measured profits in mature manufacturers are now about average, or a little above. One main reason for this change, however, is not that the business climate has changed, but rather that we have switched from looking at statewide to metropolitan area property tax rates. (We believe that metropolitan areas are more reflective of interstate competition than non-metropolitan areas.) In Kansas, this makes little difference, because the average metro and nonmetro rates are close. However in many competitor states, the rates in nonmetro areas are substantially lower than they are statewide (especially in Colorado, Missouri, and Oklahoma).

Between 1997 and 1999, two changes occurred in Kansas property taxes and income taxes that should have improved the situation for Kansas capital intensive manufacturers. First, Kansas began using income tax credits to rebate part of the property taxes paid on machinery and equipment. Second, average property tax rates in Kansas fell as the state lowered the mandatory school mill levy (rates fell about 14 percent between 1996 and 1998). However, other states in the region have also been experiencing lower effective property tax rates (Nebraska and Colorado both experienced decreases in statewide effective rates in the last few years). Also, one state in the region, Colorado, has lowered

its corporate tax rates. So while business taxes were falling in Kansas they were falling in competitive states as well.

Tax Law Simulation: Elimination of Property Taxes on Machinery and Equipment

The simulation model was used above as a measure of actual business conditions in Kansas and the region. In this section we illustrate the capability of the model to simulate or project the likely effects of possible changes in Kansas tax law. In our particular example, we assume that Kansas entirely eliminates the property tax on machinery and equipment. We also assume:

- C The lost revenues due to the tax reduction have no effect on the firm being simulated. For example, the revenues might be compensated for by increases in the personal income taxes, or reductions to services to households.
- C There are no changes in competing states.

Results of the simulation are shown in Tables 8-8 and 8-9. They show that eliminating this tax would increase the amount of profits in mature firms by 3 or 4 percent, but only by 0.5 to 1 percent in new or expanding firms. The difference, of course, is that new or expanding firms are eligible for up to 100 percent property tax abatement at the local level, while mature firms are not eligible. As long as the abatement is in place, new firms receive no benefit from eliminating the tax. New firms do receive some benefit after the property tax abatement runs out (in 10 years), but that benefit is attenuated by discounting to the present.

In the “real world,” a majority of new firms do not actually receive the full 100 percent property tax abatement. (The amount received depends on local government policies; 50 percent is a more usual number than 100 percent.) Firms in such a situation would receive an intermediate level of benefits, e.g. in the neighborhood of two percent of profits.

A reasonable interpretation is that eliminating the property tax on machinery and equipment would be unlikely to have major effects on Kansas economic development. For new firms that receive full tax abatements, elimination of the tax has insignificant effects on profits. Even with a partial tax abatement, there is unlikely to be a change in the relative ranking of Kansas among states in the region. Existing export-base firms that make major investments are generally eligible for tax abatements as well. The only firms significantly affected by eliminating the tax are mature firms making relatively small replacement investments. These firms generally do not have the option of relocating to another state.

Table 8-8:
Impact of Eliminating the Property Tax on Machinery and Equipment
New Firms Receiving Tax Credits and Abatements
Profits per Employee (full model)

	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Kansas-before tax change	10,278	47,854	13,881	11,501	18,922
Kansas-after tax change	\$10,343	\$48,322	\$13,979	\$11,545	\$19,027
Regional Average	9,769	45,556	12,942	10,635	17,578
Kansas: % Reg. Av. (before)	105.2%	105.0%	107.3%	108.1%	107.6%
Kansas: % Reg. Av (after)	105.9%	106.1%	108.0%	108.6%	108.2%

Source: Calculated by PRI.

Table 8-9:
Impact of Eliminating the Property Tax on Machinery and Equipment
Established Firms Receiving No Tax Credits or Abatements
Profits per Employee (full model)

	<i>Low Wage Low Capital Intensity</i>	<i>High Wage High Capital Intensity</i>	<i>Computer Services</i>	<i>Administrative Back Offices</i>	<i>Research and Development</i>
Kansas-before tax change	\$9,781	\$45,395	\$13,554	\$11,046	\$18,185
Kansas-after tax change	10,028	47,287	13,952	11,223	18,592
Regional Average	9,561	44,491	12,378	10,392	16,891
Kansas: % Reg. Av. (before)	102.3%	102.0%	109.5%	106.3%	107.7%
Kansas: % Reg. Av (after)	104.9%	106.3%	112.7%	108.0%	110.1%

Source: Calculated by PRI.

Conclusions

Is Kansas a low-cost state for doing business? In principle, that depends on one's perspective: whether one is concerned with new firms or mature firms, and whether the firms are capital-intensive manufacturers or less capital-intensive service firms. It also depends on whether one compares Kansas with the immediate region, or with the entire U.S. In practice, however, our data showed fairly consistent results for all industries and both stages of maturity.

The overall Kansas cost and tax climate appears competitive with other states in the region. Estimated profits per employee exceeded the regional average in all five industries, for both new and mature firms. Since this is a relatively low-cost region, Kansas should be also viewed as fairly competitive among states in the nation. In terms of rankings, Kansas generally ranked as more profitable than Colorado and Missouri, and less profitable than Iowa, Nebraska, and Oklahoma.

Just as we found in previous studies, mature firms tended to be somewhat less profitable than new firms. This mainly results from high basic property tax rates on industrial property and machinery and equipment, which are abated for new firms but not for mature firms.

Some clear patterns emerge when we examine over time the relative advantages of Kansas business locations for manufacturers. First, Kansas has consistently been a moderately attractive business location for new and expanding manufacturers, as compared with the region. Second, the Kansas tax structure leads to tax impacts on new firms that are about average for the region. Third, Kansas has some tax disadvantages for established firms that cannot make use of special credits or abatements, although these disadvantages tend to be offset by relatively low business costs.

In the policy context, we believe these are quite positive findings. First, it is a highly defensible policy choice to use tax incentives especially designed to reduce the tax load on new and expanding firms. These firms are in a better position to make locational choices than are mature and established firms. If the goal of tax incentives is to attract new jobs and expanded investment into Kansas, then its incentives have been appropriately targeted.

Second, it is important to understand that being the lowest cost location is usually not desirable as a policy goal. It is significant that the highest cost location in most of our scenarios is Colorado—yet Colorado has the fastest growing and arguably the wealthiest economy in the region. Of course, there are many important locational factors that are not considered in this report—factors such as distance to markets, industrial dynamism, local risk capital, productivity, and quality of life. In any case, low business costs generally translate into low wages and low tax revenues. Low wages generally translate into low incomes, and low tax revenues generally translate into low levels of educational expenditure and other government services. And low income and low services generally translate into a low quality of life.

A much more desirable policy goal is to be competitive in costs without having the lowest costs. And, indeed, that is exactly what the Kansas Strategic Economic Development Plan calls for. According to our data, that is what Kansas has achieved. The pressing challenge for Kansas therefore is to improve its competitiveness in terms other than cost of doing business.

APPENDIX 1: TAX REVENUE SOURCES AND DATA ESTIMATES

Two U.S. Bureau of the Census data series provide the core of information for our review of state and local finances (primarily Chapter 1; also beginning sections of Chapters 2-5). The first series includes the Census estimate of state and local government expenditures and revenues. It is available in printed format through 1992 as *Government Finances*, and is available on the Census web site in electronic format for 1993 through 1998 as *State and Local Government Finance Estimates*. The second main series includes state-level tax data only. It is available in printed format as *State Government Tax Collections* through 1991, and is available electronically from the U.S. Bureau of the Census as *State Tax Collections by State* for 1992 through 2000. The data in these publications are compiled in a consistent manner for all fifty states. Where possible, state, local, and federal definitions are brought into conformity. Our report supplements these data with population and personal income numbers from the U.S. Bureau of Economic Analysis, *State Personal Income* series. Inflation-adjusted values were calculated using the consumer price index for all urban consumers, published by the U.S. Bureau of Labor Statistics.

At the time of this writing, data on local tax revenues and expenditures were not available for years after 1998 for most states. While local tax data specific to Kansas were available from Kansas sources (Kansas Legislative Research, *Kansas Tax Facts*), these data contain subtle differences in definitions and methods from the Census data source. Hence, they were not generally the best source for various interstate and national comparisons. However, for years prior to 1999, parallel data on Kansas local tax revenues were available from both sources. By chaining the two data sources, we were able to form predictions for the year 1999 and 2000 Census data on local tax revenues. In particular, we used the 1998 Census data as the base and then assumed annual growth rates calculated from the Kansas source data.

For local sales tax data, we discovered an error of considerable size in the Census series that extended over several years; the existence of this error was confirmed by Census staff. Therefore, we substituted the data series from *Kansas Tax Facts* for the Census numbers for local sales tax data only, despite potential problems of comparability with other states.

One final data source contributed to our discussion. For years beyond 1998, we found national totals of local finance data in the Census web publication *Summary of State and Local Government Tax Revenue*. We chained together estimates from this source and the earlier-cited sources to form estimates of U.S. totals for local tax revenues for 1999 and 2000.

APPENDIX 2: TAXATION OF SERVICES BY STATE

Taxation of Services Used by Businesses, 1996

TYPE OF SERVICE	CO	IA	KS	MO	NE	OK
<i>Business Services</i>						
Billboard advertising						
Radio and TV advertising: national						
Radio and TV advertising: local						
Newspaper advertising						
Magazine advertising						
Ad agency fees						
Armored car services		X				
Bail bond fees						
Check and debt collection						
Commercial art and graphic design					X	
Commercial linen supply		X	X		X	X
Credit information, credit bureaus						
Employment agencies		X				
Interior design		X				
Maintenance and janitorial		X				
Lobbying and consulting						
Marketing						
Packing		X	X			
Exterminating		X	X			
Photocopy services		X	X		X	X
Photo finishing	X	X	X	X	X	X
Printing	X	X	X	X	X	X
Private Investigation		X				
Process serving fees						

TYPE OF SERVICE	CO	IA	KS	MO	NE	OK
Public relations						
Secretarial services						
Security services		X				
Sign construction and installation		X	X			
Telemarketing						
Telephone answering		X	X			
Temporary help agencies		X				
Testing lab services		X				
Tire recapping		X	X		X	
Window cleaning		X				
<i>Computer Services</i>						
Software - packaged		X	X	X	X	X
Software - modifications			X	X	X	X
Software - custom programs materials			X		X	X
Software - custom programs services					X	
Information services						
Data processing services						
Mainframe access and services						
<i>Utilities-Business Use</i>						
Intrastate telephone	X	X	X	X	X	X
Interstate telephone			X			X
Cellular telephone	X	X	X	X	X	X
Electricity		X	X	X	X	X
Water		X	X	X	X	
Natural gas		X	X	X	X	X
Other fuel		X	X	X	X	X

TYPE OF SERVICE	CO	IA	KS	MO	NE	OK
Sewer and refuse		x			x	
<i>Fabrication, Installation, Repair Services</i>						
Custom fabrication labor		x	x		x	
Repair material	x	x	x	x	x	x
Repair labor		x	x			
Labor charges on aircraft repair		x	x			
Labor charges on repairs to interstate vessels		x				
Labor charges on repairs to intrastate vessels		x	x			
Labor charges on repairs to fishing vessels		x	x			
Labor charges on repairs to railroad rolling stock		x				
Labor charges on motor vehicle repairs		x	x			
Labor charges on repairs to electronics		x	x			
Labor charges on repairs to other tangible property		x	x			
Labor charges on repairs or remodeling of real property		x	x			
Labor charges on repairs delivered under warranty						
Service contracts for repairs	x	x	x		x	
Installation charges by persons selling property	x		x			
Installation charges by persons other than sellers			x			
Custom processing on customer's property			x		x	
Custom meat slaughtering and cutting			x			
Welding labor	x	x	x		x	

Source: Federation of Tax Administrators, *Sales Taxation of Services: 1996 Update*.

APPENDIX 3: METRO AND NON-METRO AREAS

Metropolitan areas are defined by the U.S. Office of Management and Budget (OMB) according to published standards that are applied to Census Bureau data. The general concept of a metropolitan area (MA) is that of a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. Metropolitan areas include metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs), and primary metropolitan statistical areas (PMSAs).

The current standards provide that each newly qualifying MSA must include at least one city with 50,000 or more inhabitants or a Census Bureau-defined urbanized area of at least 50,000, and a total metropolitan population of at least 100,000. As of the June 30, 1999, OMB announcement, there were 258 MSAs in the United States. Below is a list of all the MSAs in the six states studied in this report.

Colorado

- Colorado Springs MSA
 - El Paso County
- Denver-Boulder-Greeley CMSA
 - Adams County
 - Arapahoe County
 - Boulder County
 - Denver County
 - Douglas County
 - Jefferson County
 - Weld County
- Fort Collins-Loveland MSA
 - Larimer County
- Grand Junction MSA
 - Mesa County
- Pueblo MSA
 - Pueblo County

Iowa

- Cedar Rapids MSA
 - Linn County
- Des Moines MSA
 - Dallas County
 - Polk County
 - Warren County
- Dubuque MSA
 - Dubuque County
- Iowa City MSA
 - Johnson County
- Sioux City MSA
 - Woodbury County
- Waterloo-Cedar Falls MSA
 - Black Hawk County

Kansas

- Kansas City, KS MSA
 - Johnson County
 - Leavenworth County
 - Miami County
 - Wyandotte County
- Lawrence MSA
 - Douglas County
- Topeka MSA
 - Shawnee County
- Wichita MSA
 - Butler County
 - Harvey County
 - Sedgwick County

Missouri

- Columbia MSA
 - Boone County
- Joplin MSA
 - Jasper County
 - Newton County
- Kansas City, MO MSA
 - Cass County
 - Clay County
 - Clinton County
 - Jackson County
 - Lafayette County
 - Platte County
 - Ray County
- St. Joseph MSA
 - Andrew County
 - Buchanan County
- St. Louis MSA
 - Franklin County
 - Jefferson County
 - Lincoln County
 - St. Louis County
 - St. Charles County
 - Warren County
- Springfield MSA
 - Christian County
 - Greene County
 - Webster County

Nebraska

- Lincoln MSA
 - Lancaster County
- Omaha MSA
 - Cass County
 - Douglas County
 - Sarpy County
 - Washington County

Oklahoma

Lawton MSA

Comanche County

Oklahoma City MSA

Canadian County

Cleveland County

Logan County

McClain County

Oklahoma County

Pottawatomie County

Tulsa MSA

Creek County

Osage County

Rogers County

Tulsa County

Wagoner County

Source: U.S. Bureau of the Census, *Statistical Abstract of the United States, 2000*.

APPENDIX 4: HYPOTHETICAL FIRM COST STUDIES

In the hypothetical firm approach to modeling state tax differences, including the approach used in this report, a hypothetical firm is created and after being subjected to the various taxes and incentives applicable, its bottom line or some other measure of profitability is examined. While any modeling approach will have its strengths and weaknesses, it is widely believed by economists that the hypothetical firm method is superior to others for comparing the effects of various tax structures. As explained by Fisher and Peters [1997]:

A carefully constructed hypothetical firm model produces by far the most satisfactory measures of the burden of business taxes or the value of investment incentives across different states and localities. Most of the criticisms of the method are either misplaced or can be nullified by the appropriate use of assumptions and model structure.

In the sections below, we present summaries of hypothetical firm models that have been created for states and localities other than Kansas. We compare their characteristics with the PRI model.

James and Leslie Papke

This father and daughter team have probably done more hypothetical firm simulations than any other individual or research group. Their earliest study was of the Midwest region (Papke and Suyderhoud, 1979). Others include Indiana (Papke, 1979), New York (Case, Papke, and Koenigsberg, 1983), Hawaii (Papke, 1984), Indiana (Papke and Papke, 1984).

Their model typically includes 52 different manufacturing firms for comparison. The differences between these firms include which specific manufacturing industry they are in as well as asset size; these are the primary determinants of the tax burden a firm will have. Simulations assume an already existing business whose after-tax rate of returns on investment are calculated in some original location. The firm then decides to expand: either at the same place or in a new state. The net after-tax rates of return on investment are then calculated after the expansion and compared to the original returns. Doing this for several locations allows rankings of competitiveness to be made between sites or states.

The Papkes' model does not factor in the effect of tax incentives or abatements and therefore measures tax effects in isolation, not as they would actually occur in reality. This also allows them to not concern themselves with distinguishing between new firms and established firms, who most often are treated differently when it comes to state incentive programs. Their model simply assumes all firms are already established.

Robert Tannenwald

Tannenwald, singly and in conjunction with others, has done several studies for the state of Massachusetts: Brooks, Tannenwald, Sale, and Puri [1987]; Tannenwald [1993, 1994]; and Tannenwald and Kendrick [1995].

The model he uses is primarily based on Papke's, with some revision and updating. Simulations are run for manufacturing firms in five different industries. The after-tax cash flows of each firm are measured when they expand in each of 16 sites: five selected in Massachusetts, ten in competing states (Maryland, New Hampshire, New York, North Carolina, Pennsylvania, California, Tennessee, Texas, Connecticut, and Illinois), as well as in one 'fictitious' site, where there are no taxes. All real sites were chosen because those towns relied heavily on one or more of the five manufacturing industries selected for study, as well as for their potential for competitiveness. In addition, simulations are run for two scenarios: the first assumes the expanding firm sells its products primarily in its home state, even when the expansion took place elsewhere: the goods are still returned and sold in the home state. The second scenario assumes the firm sells nearly all of its goods out of state. However, for simplicity's sake, their model ignores throw-back provisions for out of state sales.

Peter Fisher and Alan Peters

One of the more recent works in the area of hypothetical firm studies comes in the form of Fisher and Peters' book, *Industrial Incentives* [1998]. Their approach is one of the few which includes the effects of incentives on the firm's return on investment.

Their list of representative firms totals 16: a large and small firm in each of eight manufacturing industries. They studied the tax effects in 24 states that account for the most manufacturing employment in the U.S. In addition, they compare over 100 cities with populations over 10,000 within those states. Their simulations were run for two scenarios. The first assumes the firm has operations only in the state in question and builds a new branch plant at the same site. The second assumes the firm is initially a multi-state corporation with facilities spread throughout the 24 states in the sample, which then builds a branch plant located in one of those states. They use an interesting concept to represent the fact that this second type of firm has operations in all 24 states: for tax measurement purposes, they assume it actually resides in a mythical "median state" which has state and local tax systems representing the median of the 24.

Others

For more information on other hypothetical firm models, the reader is encouraged to peruse Fisher and Peters' 1997 article in *Regional Studies*, which is a comprehensive and probably the most recent review of additional efforts in the field.

**Table A4-1:
Hypothetical Firm Models**

	PRI Model 2001	Fisher and Peters 1998	Tannenwald 1987, 1993, 1994, 1995	Papke 1979, 1983, 1984
What is being measured	After-tax profits of a firm before and after it locates or expands in one of six states.	The change in cash flows of a firm in a mythical state when it builds a branch facility in one of the 112 cities.	Comparison of after-tax cash flows of firm before and after expansion in current location and each of the 15 others.	Net after-tax rate of return on marginal investment in branch firm's alternative location, compared to rate of return for parent firm in Indiana.
Geographic scope	Rural and urban sites in Kansas, Missouri, Iowa, Nebraska, Oklahoma, and Colorado.	Studied taxes in 24 states accounting for the most manufacturing employment in U.S. and 112 cities in those states.	Measured taxes in five sites within Massachusetts and ten in competing states.	Tax structure of Indiana compared to sites in eleven other states, mostly in the East and Midwest [1984].
Type of firms	Two aggregate types of manufacturing firm (high capital intensity-high wage and low capital intensity-low wage) plus three service firms (computer services, admin. offices, and R&D). Previous versions of the model include as many as 15 firm types.	16 hypothetical manufacturing firms, one large and small in each of 8 selected, 3-digit SIC manufacturing industries.	Five hypothetical firms, each representative of a different manufacturing industry with a significant presence in Massachusetts.	52 representative manufacturing firms: thirteen manufacturing groups, each broken down into four asset sizes.
Time length of study	20 years.	20 years.	60 years.	60 years.
Incentives	All possible and applicable incentives are taken into account.	Taken into account.	Not included.	Not included.
Production function	Leontief.	Leontief.	Leontief.	Leontief.
Unemployment Insurance / Workers Compensation	Both included.	Not included.	Unemployment insurance only.	Not included.

	PRI Model 2001	Fisher and Peters 1998	Tannenwald 1987, 1993, 1994, 1995	Papke 1979, 1983, 1984
Sales Factor	When a manufacturing firm locates in a state, it is assumed that it has in-state sales amounting to 10% of total sales of the firm. Service firms are assumed to have all of their sales in-state for income taxation purposes. The exception is the administrative office, which, when it locates in a state, creates no additional in-state sales.	Sales are distributed by population among the 24 states and the “median” state where the firm originally resides. Median state is given a large share of total U.S. population. Hence, only a small share of sales goes to non-taxing states (they use 20%). Most of the sales will be destined for the median state, where the firm is taxed. This supposedly allows more accurate comparisons of throwback versus non-throwback states, as well as of states allowing the deduction for other state’s income taxes versus states that do not.	First scenario assumes each firm’s entire sales are within the home state, and remain so even with the addition of an out of state expansion. Second scenario assumes the firm’s sales in its state of origin amount to only 10 percent of its total sales, the rest are in other states. However, there are assumed to be no sales in the state where the firm expanded and located its branch. Throwbacks have been omitted in order to not bias the results.	Attempts to take into account all of the various throw-back requirements in the studied states. Although sales have been apportioned in varying ways with different studies, a typical allocation would have 10 percent of the firm’s sales be within the home state, 80 percent to outside taxing states, and 10 percent to non-taxing states.
Property Taxes	State and local property taxes.	State and local property taxes.	State and local property taxes.	State and local property taxes; value of land assumed to be constant across all states.
Income Taxes	Federal, state and local corporate income taxes.	Federal, state and local corporate income tax.	Federal, state and local corporate income taxes.	Federal, state and local corporate income taxes.

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