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Report to Governor's Blue Ribbon Commission on Tax Reform by Economic Consultants

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Report to Governor's Blue Ribbon Commission on Tax Reform by Economic Consultants

Final

Prepared for:

Governor's Blue Ribbon Commission on Tax Reform

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Executive Summary

Section 1: Introduction

- Two basic points come from our analysis of Kentucky's tax system: a broader tax base is needed so that revenue can keep pace with future economic growth, and changes are needed to improve Kentucky's economic competitiveness.
- Without fundamental reforms Kentucky could face a \$1 billion shortfall by 2020, and could find itself at a competitive disadvantage to neighboring states for business growth, retention, and recruitment.
- The options we present below can improve future revenue growth and economic competitiveness—which are evaluated with respect to other important factors, such as fairness and simplicity. The Commission should view these options as alternative routes to a different tax system, but with varying implications for adequacy, elasticity, competitiveness, fairness, and simplicity.

Section 9: Policy Options

- These options are based on two core ideas—broadening the tax base will make the system more elastic, and shifting taxation away from business capital and labor earnings, and toward consumption, will make it more competitive.
 - All of the options would change Kentucky's current tax system. However, some are modest changes of the existing structure while others represent a fundamental change in the current system. One can think of these options as existing along a continuum of change—from small to large.
 - Our list of options is not exhaustive. There are many possible options available to the Commission—some of which might not be delineated in this report.
 - Several of the options presented here are mutually exclusive. Pursuing some options would preclude the adoption of others. On the other hand, we present options whose effectiveness and applicability is contingent upon the adoption of others.
 - The options are based on the premise that fairness is best evaluated through the entire tax system rather than through individual taxes.
 - Given current tax rates, the base-broadening options will increase state revenue. However, it is not our intention to suggest that adoption of these base-broadening measures necessarily means that revenues need to increase. An alternative might be to adopt base-broadening measures in conjunction with reductions in tax rates. A small number of the options would reduce revenues but make Kentucky more competitive.
 - Advantages of a broad tax base include:
 - a broader tax base will generally be more elastic;
 - a broader tax base will allow for lower tax rates, significantly reducing the inefficiencies associated with taxes and make Kentucky more competitive without the use of expensive and distortionary incentives;
 - a broader tax base will generally reduce differences in tax treatment of households or firms in similar economic conditions;
- and
- a broader tax base may simplify tax reporting and increase compliance.

- Advantages of more reliance on taxation of consumption and less on business capital and labor earnings include:
 - increase Kentucky's competitive position and employment in Kentucky by making it more attractive for firms to locate and invest in Kentucky;

and

- reduce compliance costs for firms engaged in business in Kentucky;
- The ordering of the options is not intended to represent any ranking or recommendation. Instead, we begin with options for the largest source of revenue for the state, the individual income tax, and then order each of the taxes based on its share of revenue. The options for each of the taxes are, for the most part, ordered based on what the magnitude of the change in the tax, from minor reforms to the existing structure to sometimes an extremely different structure. The specific policy options we propose for the Commission's consideration are:

Individual Income Tax Options:

- Option 1: Conform the Kentucky Individual Code to the Federal Code as of a specific date
- Option 2: Enact a State Earned Income Tax Credit (EITC)
- Option 3: Tax Pension and IRA income
- Option 4: Make Taxable Income equal to Federal Adjusted Gross Income (AGI) less a significant standard deduction and tax credit for low income households

Sales Tax Options:

- Option 1: Broaden sales taxes to selected services
- Option 2: Impose a state gross receipts tax of up to 3 percent on providers of electricity for residential use
- Option 3: Impose the sales tax on food for consumption at home and provide a tax credit or other means for to offset the additional tax burden for low-income households
- Option 4: Exempt business purchases of energy
- Option 5: Impose a gross receipts tax of between 1 and 3 percent on both residential and business electricity.
- Option 6: Support federal legislation allowing states to require remote firms to collect the sales tax.

Business Tax Options:

Reform the existing corporate and LLET tax structures:

- Option 1: Conform the corporate income tax base with Federal Code as of a specific date
- Option 2: Addback management fees in calculation of the corporate income tax base
- Option 3: Use Destination Sourcing for Services
- Option 4: Lower the \$3.0 million LLET threshold to \$1.0 million and phase out the effects through \$2.0 million
- Option 5: Replace the double-weighted sales formula with single factor sale apportionment for the Corporate Income Tax.

Major reform:

- Option 6: Replace the Corporate Income Tax and LLET with a Gross Receipts tax or with some other sources of revenue.

Property tax reforms

- Option 7: Eliminate personal property taxation
- Option 8: Exempt inventory from property taxation and eliminate the Barrel Tax
- Option 9: Freeze the state property tax rate at 12 cents per \$100 of value

Local Tax Options:

- Option 1: Permit a Local General Sales Tax

Section 2: Characteristics of Kentucky's Tax System

State Tax Revenue

- Among its competitor states, Kentucky ranked 2nd in state tax revenue per capita in 2011, collecting \$2335 per capita or 7.3% of income.
- State tax revenue sources for Kentucky and its competitors are similar, with Kentucky taxing property more and sales and individual income relatively less than its competitors.

State and Local Tax Revenue

- Kentucky ranks 10th in combined state and local own-source revenue per capita (\$4905).
- The very different rankings of state and state and local tax burdens are due to the fact that 66% of state and local tax revenues is collected by state government in Kentucky while the median state share is 56% among all the competitor states.

State Tax Revenue Trends

- From 2006 to 2011 Kentucky has had a more stable revenue stream than competitor states. From 2006 to 2008, Kentucky revenues increased by less than 2 % and from 2008 to 2011 they decreased by only 5 %, much less than many states.

Personal Income Tax

- With the exception of the lowest income brackets, average tax rates (taxes/income) are from 1% - 2% higher in Kentucky than for a weighted-average its competitor states.

State Sales Tax

- At 6%, Kentucky's general sales tax ranks fifth among the 13 states and is the median of sales taxing states.
- Kentucky's practice of not taxing food is followed by 4 of its 12 competitor states. Some of its competitors tax food at a lower rate.
- Kentucky and virtually all of its competitors do not tax prescription drugs and tax nonprescription medicines.

Selective Sales Taxes

- Kentucky's tax on gasoline at \$0.295 a gallon is 3rd highest among its competitors.
- Kentucky's \$0.60 a pack tax on cigarettes is in the middle for its competitors.
- The taxation of alcohol, particularly in Kentucky, is more complicated, than most other goods. In addition to excise taxes, alcohol is subject to the general sales tax, and in Kentucky wholesale tax as well as case taxes. Primarily because of the wholesale taxes on alcohol products, Kentucky has high taxes on alcohol – highest on wine among competitor states, second highest for beer, and among those states with unregulated sales, second highest for distilled spirit.

State Corporate Income Tax

- Kentucky has a flat corporate tax, in contrast to most of its competitors.
- Kentucky's top tax rate of 6% ranks as the third lowest rate among its competitors and is below the median of all corporate income taxing states.
- Five of Kentucky's competitors apportion using Double Weighted Sales and four use Sales only.

Section 3: Adequacy and Elasticity

- Kentucky faces a structural deficit that could reach \$1 billion by 2020.
- Revenue growth in Kentucky has slowed in the last several years, especially when compared to earlier periods. From 2000 to 2011, tax revenue failed to keep pace with the economy or declined more than the economy¹ in eight years while revenue growth exceeded economic growth in three years.
- If the revenue trend demonstrated from 2000 to 2008² continues to 2020, then state government would decrease to below 6.5 percent of the economy—a level not seen since 1968 when it was 5.9 percent.
- Revenue elasticity for total tax revenue for 2000 – 2008 in Kentucky was 0.81 – a 10% increase in personal income only yields an 8.1% increase in tax revenue. For the individual income tax it was 0.82 and for the general sales tax it was 0.87

Section 4: Fairness and the Distribution of Taxes

General Sales and Excise Taxes

- Kentucky's general sales tax, like that of other states, is regressive. We estimate that households in the income range of \$20,000 - \$29,000 pay about 2.0% of their income in direct general sales taxes while those households with incomes from \$120,00 – \$149,999 pay about 1.2%.
- We estimate that expanding the base to include additional consumer services while keeping the rate at 6% will increase income range of \$20,000 - \$29,000 to over 3.0% of their income in direct general sales taxes and to about 1.6% for households in the \$120,000 – \$149,999 range.
- As alcohol, tobacco, and gasoline are all larger shares of income for lower-income households taxes on these goods are regressive as well.

Individual Income Taxes

- Throughout the income distribution and for different types of filers, individual income taxes tend to be 1% - 2% higher shares of income than the average of our competitors.

Section 5: The Competitiveness of the Kentucky Tax System

Income

- Kentucky's income per capita in 2010 was about 80% of the U.S. average, ranking it 11 out of 13 competitive states.

¹ Kentucky tax revenue declined by 3.1% and personal income declined by 1.2% in 2009—the trough year of the Great Recession.

² Given the extraordinary nature of the Great Recession in the late 1990s we do not include data from 2009-2011 in this analysis.

- Kentucky, its competitor states, and the U.S. overall, experienced virtually the same income growth prior to 1990.
- After 1990 growth rates for the U.S. slowed, but continued to be strong for Kentucky and many of its competitor states.

Population

- Kentucky's population grew by approximately thirty percent from 1969 to 2010, slightly above the average of its competitor states but below the U.S. average.

Earnings

- From 1969 to 2010, real private earnings per employee grew about 35%, ranking it 10 out of the 13 competitive states.
- From 2001 to 2010, seven of the competitor states, including Kentucky, experienced a real decline in private earnings per employee.

Employment

- Total employment in Kentucky grew 80% from 1969 to 2010, placing it in the middle of the pack of competitive states.
- In the more recent period of 2001 to 2010, Kentucky's total employment grew about 3%, ranking it 7 out of the 13 competitive states.

Business Taxes

- Kentucky ranks third highest in business taxes as a percentage of private sector gross state product in 2011.
- In contrast, studies comparing Kentucky's taxation of new and mature investment to other states for different facility forms suggests that Kentucky compares favorably to most of its competitors. The Ernst&Young/Cost study places Kentucky as having the fourth lowest tax rate on new investment among its 13 competitor states.

Taxes and Economic Development

- A review of the extensive literature in economics on the impact of state taxes on measures of economic activity such as employment, investment, and gross state product suggests that taxes do reduce economic activity. However, the magnitude of the impact is reduced when public services are accounted for in the estimation.

Section 7: Local Tax Issues

- Kentucky has a very centralized revenue system with 65% of state and local revenue collection being done by the state government.
- Local governments in Kentucky finance through very different revenue sources than most states. Kentucky local governments are less reliant on the property taxes, much more reliant in individual income (occupational license) taxes, and do not have the option to tax general sales taxes.
- In only 15 states do states not have the option to have a local general sales tax and in only 15 states do local governments have the authority to tax income.

Summary and Scoring of Tax Reform Options*

Option		Score	Elasticity	Progressivity	Horizontal Equity	Simplicity	Competitiveness	Other States
Individual Income Tax Options:								
1	Conform the Kentucky Individual Code with Federal Code as of a specific date	Negative \$9.0 million initially, lower over time.	+	0	+	+		NC, SC, GA, IL, IN, MO, OH, VA ¹
2	Enact a State Earned Income Tax Credit (EITC)	-\$45.0 million ²	+	+	0	0		IL, IN, VA
3	Increase the taxation of Pension and retirement income	+\$145.0 million ³	+	0/+	+	+		GA, IN, MO, NC, OH, SC, VA, WV
4	Make Taxable Income equal to Federal Adjusted Gross Income (AGI) less a standard deduct and tax credit for low-income households	+780.0 million, making flat tax at 6.0%. Neutral at 4.0 percent	+	0/+	+	+	+	OH, IL, IN
Sales Tax Options								
1	Broaden sales taxes to selected services	+\$176.4 million	+	+	+	-/0		NC, SC, GA, AL, TN, OH, MS, WV
2	Impose a state gross receipts tax of up to 3 percent on providers of electricity for residential use	+360.0 million	+	0	+	-/0		
3	Impose the sales tax on food for consumption at home.	+484.0 million	+	-	+	+		IL, MO, TN, VA, WV
4	Exempt business purchases of energy	-124.0 million	0			+	+	
5	Impose a gross receipts tax of between 1 and 3 percent on both residential and business electricity						+	
6	Support federal legislation allowing states to require remote firms to collect the sales tax.	+120 million, pending review of the final legislation	+	+	+	-	+	

*The notation “+,-,0” means that the option will increase (+), have no impact (0), or decrease (-) the tax code with respect to that criterion. A “+” in “progressivity,” for example, means progressivity is increased with that option but does not imply any judgment about the merits of increasing progressivity. A blank cell means that the impact of the option on the criterion is difficult to ascertain though likely small. The scoring and evaluation of each option is made given no other changes in Kentucky’s tax structure. As it is unlikely that many of these options are done in isolation this assumption probably overstates the impacts of the options.

Summary and Scoring of Tax Reform Options (continued)*

Option		Score	Elasticity	Progressivity	Horizontal Equity	Simplicity	Competitiveness	Other States
Business Tax Options								
Reform the existing CIT and LLET								
1	Conform the corporate income tax base with Federal Code as of a specific date	Negative \$16.0 million initially, lower over time.	+			+	+	
2	Addback management fees in calculation of the corporate income tax base	+13.0 million	+				+	12 states
3	Use Destination Sourcing for Services	Final Score Pending					+	IL, GA, AL
4	Lower the \$3.0 million LLET threshold to \$1.0 million and phase out the effects through \$2.0 million	+\$14.2 million	+				+	
5	Replace the double-weighted sales formula with single factor sales apportionment for the Corporate Income Tax.	-\$64.0 million					+	GA, IL, IN, SC
Major Reform								
6	Replace the Corporate Income Tax and LLET with a Gross Receipts tax or with some other sources of revenue	Revenue Neutral depending on GRT tax rate	+			+	+	OH
Property Tax Options								
7	Eliminate personal property taxation	Final Score Pending	+			+	+	OH
8	Exempt inventory from property taxation and eliminate the Barrel Tax	-\$4.7 million	+			+	+	
9	Freeze the state property tax rate at 12 cents per \$100 of value		+			+	0	
Local Tax Options								
1	Permit a Local General Sales Tax		+			-		TN, VA, IL, IN,
1. North Carolina and South Carolina conform to federal AGI while the remainder of states listed conforms to taxable income. 2. Assuming a Low Income Credit at 5% of the Federal Credit 3. Assuming a phase-out of existing exemption 4. Includes tax loss from PTE using the individual income tax								

*The notation “+,-,0” means that the option will increase (+), have no impact (0), or decrease (-) the tax code with respect to that criterion. A “+” in “progressivity,” for example, means progressivity is increased with that option but does not imply any judgment about the merits of increasing progressivity. A blank cell means that the impact of the option on the criterion is difficult to ascertain though likely small. The scoring and evaluation of each option is made given no other changes in Kentucky’s tax structure. As it is unlikely that many of these options are done in isolation this assumption probably overstates the impacts of the options.

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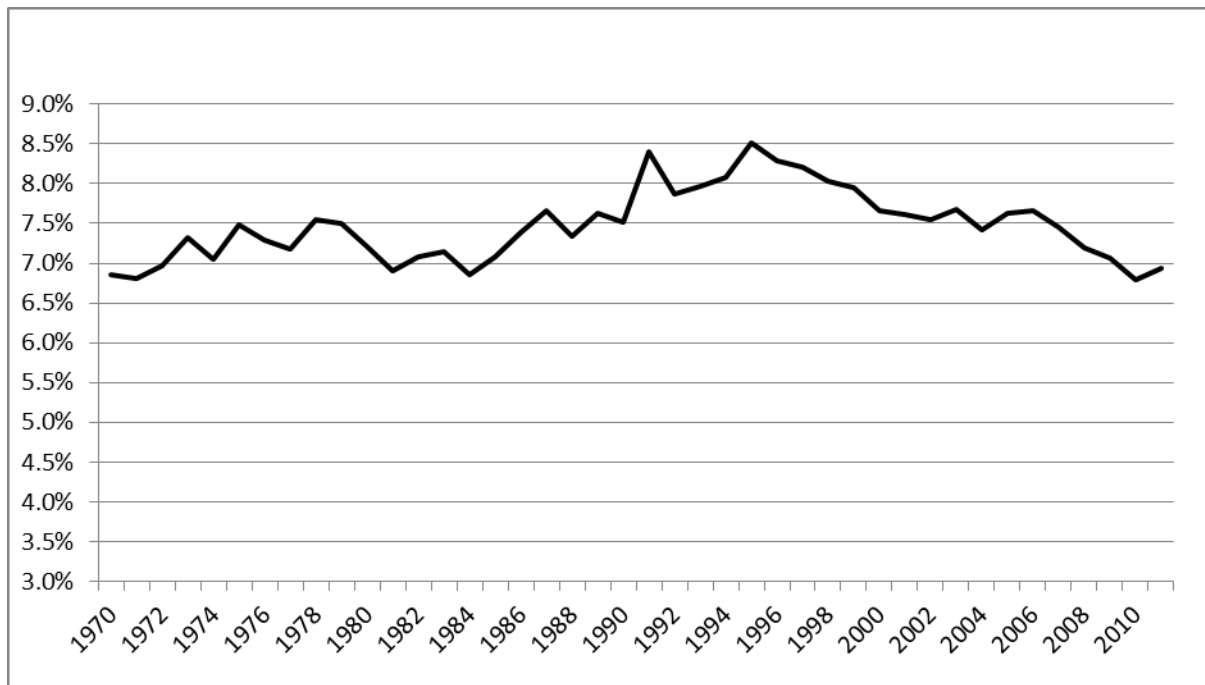
1. Introduction

1.1 Why Tax Reform Now?

Two basic points come from our analysis of Kentucky's tax system: a broader tax base is needed so that revenue can keep pace with future economic growth, and changes are needed to improve Kentucky's economic competitiveness. Without fundamental reforms Kentucky could face a \$1 billion shortfall by 2020, and could find itself at a competitive disadvantage to neighboring states for business growth, retention, and recruitment. The options we present below can improve future revenue growth and economic competitiveness—which are evaluated with respect to other important factors, such as fairness and simplicity. Just as there are many routes to the same destination—some shorter, others faster, and some more scenic—the Commission should view these options as alternative routes to a different tax system, but with varying implications for adequacy, elasticity, competitiveness, fairness, and simplicity.

Our examination of revenue trends suggests important changes over the last several years that are likely to continue into the foreseeable future. *Figure 1.1* shows Kentucky state tax collections from 1970 to 2011 as a percentage of personal income. As the figure shows, as a share of income, revenue peaked in 1995 and has been declining since. Revenues have not kept pace with personal income and our analysis suggests this trend will continue without changes to the tax system.

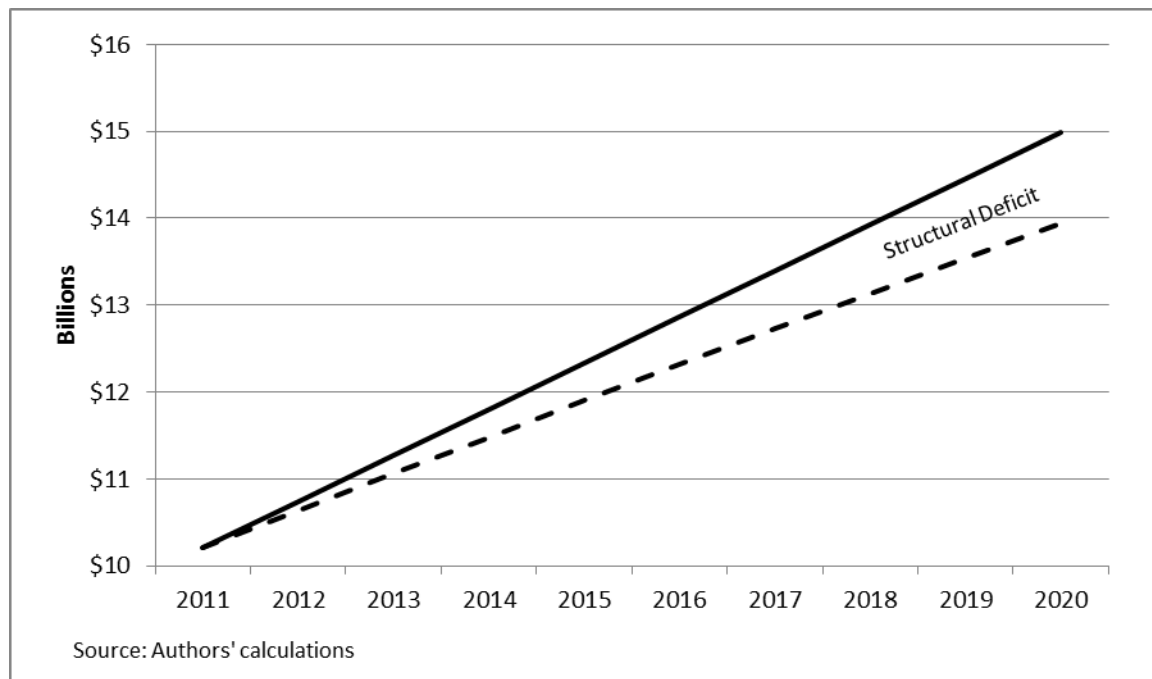
Figure 1.1: Kentucky Total State Tax Collections as a Percentage of Personal Income, 1970-2011



If expenditures remain a relatively stable share of personal income in the future, revenues will not keep pace. Then based on the relationship we estimate between personal income and tax revenue and if expenditures remain a stable share of income, Kentucky will have a structural deficit that could reach \$1 billion by 2020 as illustrated in *Figure 1.2*. We return to this discussion in more detail in *Section 3*.

That tax revenues under the current tax code do not keep pace personal income need not imply an increase in taxes is needed. An alternative strategy would be a reduction in expenditures. However, what these recent trends suggest is that if spending, above or below current levels, is to be relatively stable as a share of income, we do not have the tax structure to support it.

Figure 1.2: Simulated Kentucky Revenue



1.2 What is Tax Reform?

The answer probably depends upon who you ask. Some may say it means tax increases; others may say it means decreases in taxes. While whether state tax revenues need to increase or decrease is certainly important, this is as much an issue about state expenditure policies as it is tax policy. We remain agnostic on this question, only providing some information to the Commission that may help them address these issues.

It is our view that tax reform is as much or more about *how* we tax as *how much* we tax. The impacts of the tax on the economy – households and businesses alike – not only depend on how much we are taxed but how. Differences in how we collect taxes, even if the amount we collect is the same, will have different effects on Kentucky's competitiveness, how our revenue stream grows, the distribution of tax burden, and how efficiently our economy operates. A large part of our task in this report is to explain the impacts of these different tax options on Kentucky's economy.

1.3 Our Review of Kentucky's Tax System

Our charge is to evaluate Kentucky's tax system with respect to five issues: adequacy, elasticity, fairness, competitiveness, and simplicity and compliance. In addition to examining and describing Kentucky's tax system we were also asked to compare our code to our competitor states. After this review and comparisons are made, we offer a number of options for reforming the tax code.

In *Section 2* we discuss characteristics of the Kentucky tax system and examine trends in tax revenue. We also provide some comparisons of the Kentucky's tax system with its competitor states of Alabama, Georgia, Illinois, Indiana, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, and West Virginia.

Our discussion of the adequacy and elasticity of the Kentucky tax system is found in *Section 3*. Measurement of adequacy can be an esoteric and theoretical discussion that would not be very useful to the Commission, but ultimately it depends on what the residents of Kentucky desire in public services. We can provide very useful information on recent trends in Kentucky expenditures and how our current revenues and expenditures compare historically and how they compare with other states. In this section we estimate the elasticity of Kentucky's tax base, how tax revenue grows with personal income, and discuss some of the implications for future revenue stability.

Fairness and the distribution of tax burden are the topics of *Section 4*. Like adequacy, we have no expertise in what makes a "fair" tax system. Instead, we provide information about the distributional impacts of Kentucky's tax system and how they compare to those in competitor states.

In *Section 5* we discuss issues of competitiveness. We begin by comparing economic growth in Kentucky with that of its competitors. In this section, we also review and summarize some studies comparing tax burdens on businesses across states. Finally, we offer a review of the myriad of studies examining the impact of state and local taxation on employment and firm location.

Section 6 discusses the issues of simplicity and compliance while *Section 7* discusses local tax issues. In *Section 8*, we discuss recent tax reforms in the competitor states and Kentucky as well as other recent studies of tax reform in Kentucky. Finally, in *Section 9* we propose some options for tax reform. We discuss these more fully next.

1.4 *Tax Policy Options*

In *Section 9*, we provide a discussion of the details on and rationale for the proposed reforms we list below. The proposed options are based on two underlying themes— broadening the tax base and relying more heavily on taxation of consumption and less on business capital and labor earnings.

The options we suggest are not the only options consistent with these two themes and might be considered starting points for other options the commission might consider. Many of these options are mutually exclusive; some options, as we discuss later, are most effective in conjunction with the adoption of other options. The options are based on the premise that fairness is best evaluated through the entire tax system rather than through individual taxes.

The options we propose focus on modifications, some modest and others more radical, of the tax base. Given current tax rates, these base-broadening options will increase state revenue. However, it is not our intention to suggest that adoption of these base-broadening measures means that revenues need increase -- an alternative might be to adopt base-broadening measures in conjunction with reductions in tax rates. A small number of the options would reduce revenues but make Kentucky more competitive.

- Advantages of a broad tax base include:
 - a broader tax base will generally be more elastic;
 - a broader tax base will allow for lower tax rates, significantly reducing the inefficiencies associated with taxes and make Kentucky more competitive without the use of expensive and distortionary incentives;
 - a broader tax base will generally reduce differences in tax treatment of households or firms in similar economic conditions;

and

- a broader tax base may simplify tax reporting and increase compliance.

- Advantages of more reliance on taxation of consumption and less on business capital and labor earnings include:
 - increase Kentucky's competitive position and employment in Kentucky by making it more attractive for firms to locate and invest in Kentucky;

and

- reduce compliance costs for firms engaged in business in Kentucky.

The ordering of the options is not intended to represent any ranking or recommendation. Instead, we begin with options for the largest source of revenue for the state, the individual income tax, and then order each of the taxes based on its share of revenue. The options for each of the taxes are, for the most part, ordered based on what the magnitude of the change in the tax, from minor reforms to the existing structure to sometimes an extremely different structure. The specific policy options we propose for the Commission's consideration are:

Individual Income Tax Options:

- Option 1: Conform the Kentucky Individual Code with Federal Code as if a specific date
- Option 2: Enact a State Earned Income Tax Credit (EITC)
- Option 3: Tax Pension and IRA income
- Option 4: Make Taxable Income equal to Federal Adjusted Gross Income (AGI) less a significant standard deduction and tax credit for low income households

Sales Tax Options:

- Option 1: Broaden sales taxes to selected services
- Option 2: Impose a state gross receipts tax of up to 3 percent on providers of electricity for residential use
- Option 3: Impose the sales tax on food for consumption at home and provide a tax credit or other means for to offset the additional tax burden for low-income households
- Option 4: Exempt business purchases of energy
- Option 5: Impose a gross receipts tax of between 1 and 3 percent on both residential and business electricity.
- Option 6: Support federal legislation allowing states to require remote firms to collect the sales tax.

Business Tax Options:

Reform the existing corporate and LLET tax structures:

- Option 1: Conform the corporate income tax base with Federal Code as of a specific date
- Option 2: Addback management fees in calculation of the corporate income tax base
- Option 3: Use Destination Sourcing for Services
- Option 4: Lower the \$3.0 million LLET threshold to \$1.0 million and phase out the effects through \$2.0 million
- Option 5: Replace the double-weighted sales formula with single factor sale apportionment for the Corporate Income Tax.

Major reform:

- Option 6: Replace the Corporate Income Tax and LLET with a Gross Receipts tax or with some other revenue sources.

Property tax reforms

- Option 7: Eliminate personal property taxation
- Option 8: Exempt inventory from property taxation and eliminate the Barrel Tax
- Option 9: Freeze the state property tax rate at 12 cents per \$100 of value

Local Tax Options:

- Option 1: Permit a Local General Sales Tax

2. Characteristics of Kentucky's Tax System

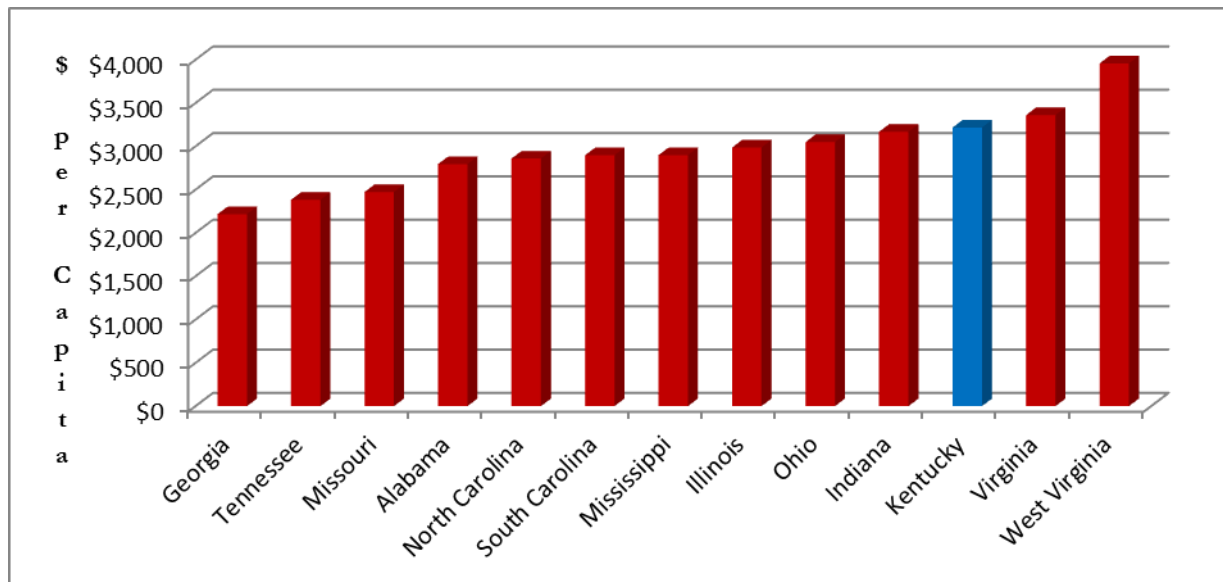
Before we directly address the five criteria for evaluating the Kentucky tax system and offer some policy options for reform, we first offer a brief overview of the system – what taxes does Kentucky use and how does this use compare to its competitor states.³ We begin with an examination of total revenue collections then examine state personal income taxes, state sales and selective sales taxes, and corporate income taxes in more detail. A brief summary of the more detailed report, particularly information found in the tables and figures is found below.

Below we provide some data on and discussion of current state tax practices in Kentucky and its competitor states.

2.1 Revenue Collections

Figures 2.1A and 2.1B report total state revenue in per capita terms and as a percentage of income for Kentucky and its “competitor” states⁴ for fiscal year 2009. This revenue includes not only tax revenue but revenue from fees and operating charges for state operations. As can be seen in the table, Kentucky collects \$2335 in state revenue per capita or about ten percent of state personal income. In per capita terms, this is third behind Virginia and West Virginia and in per capita terms, second only to West Virginia.

Figure 2.1A: Total State Revenue per Capita (2009)

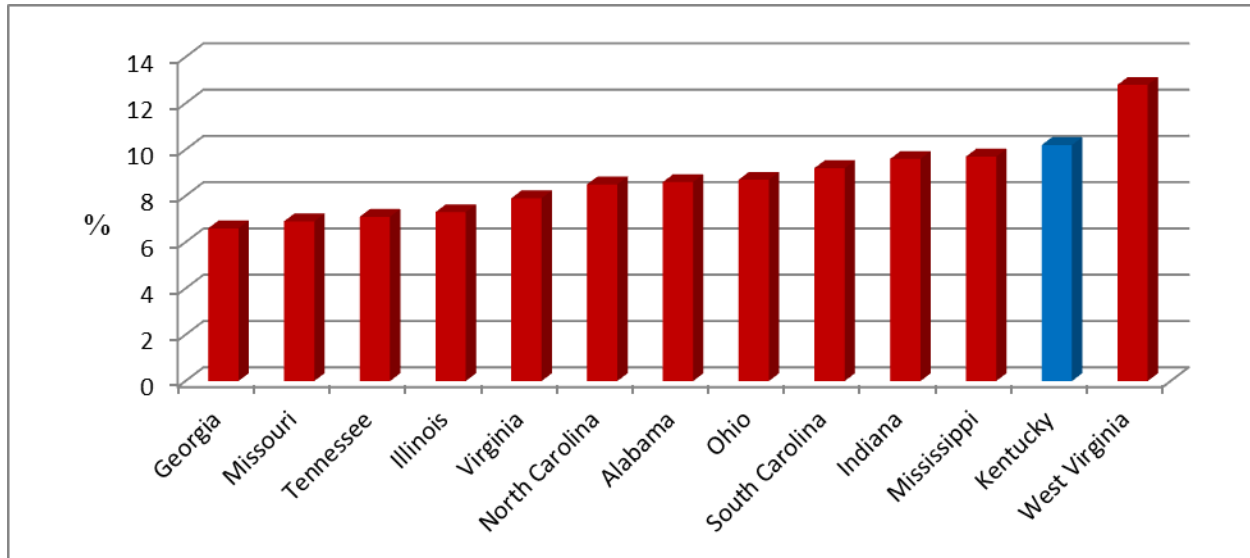


Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

³Competitor states include Alabama, Georgia, Illinois, Indiana, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, and West Virginia.

⁴ Competitor states as designated by Cabinet for Economic Development that include Alabama, Georgia, Illinois, Indiana, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, and West Virginia.

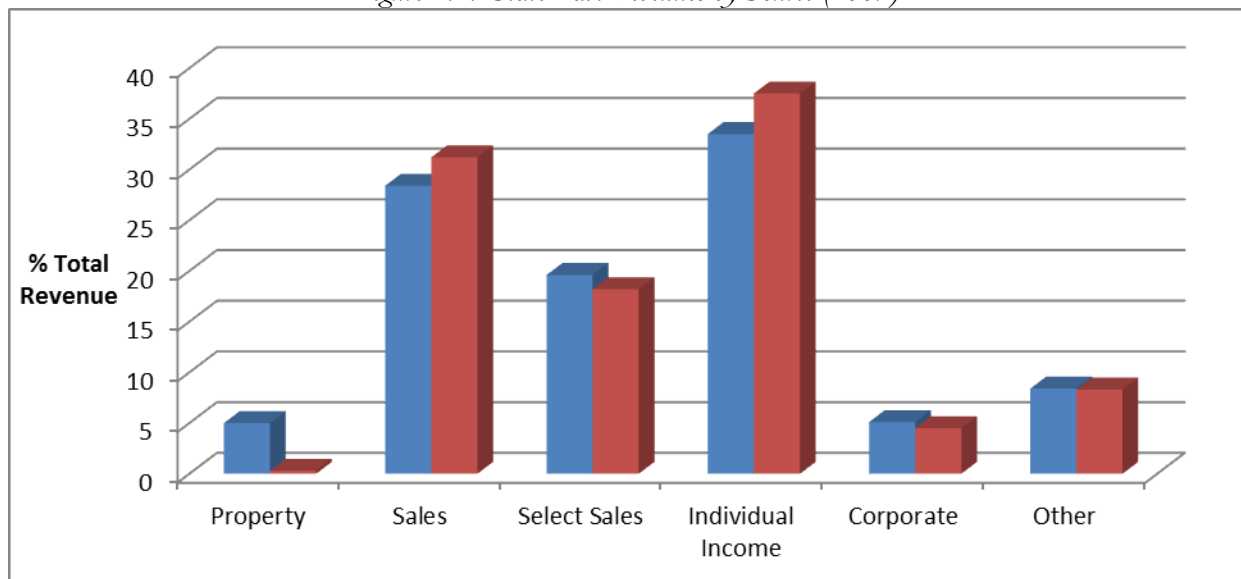
Figure 2.1B: Total State Revenue as a Percent of Income (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

Figure 2.2 compares the percentage of revenue collected by each reported tax source for Kentucky and a weighted-average of its competitor states.⁵ As the figure shows, Kentucky's state revenue sources are similar to those of its competitors. Kentucky relies somewhat less on the sales tax and personal income tax than its competitors, slightly more on selective sales taxes, and significantly more on the state property tax. More detail on the revenue sources of specific states can be found in Table A.1 in the Appendix to this report.

Figure 2.2: State Tax Revenues by Source (2009)



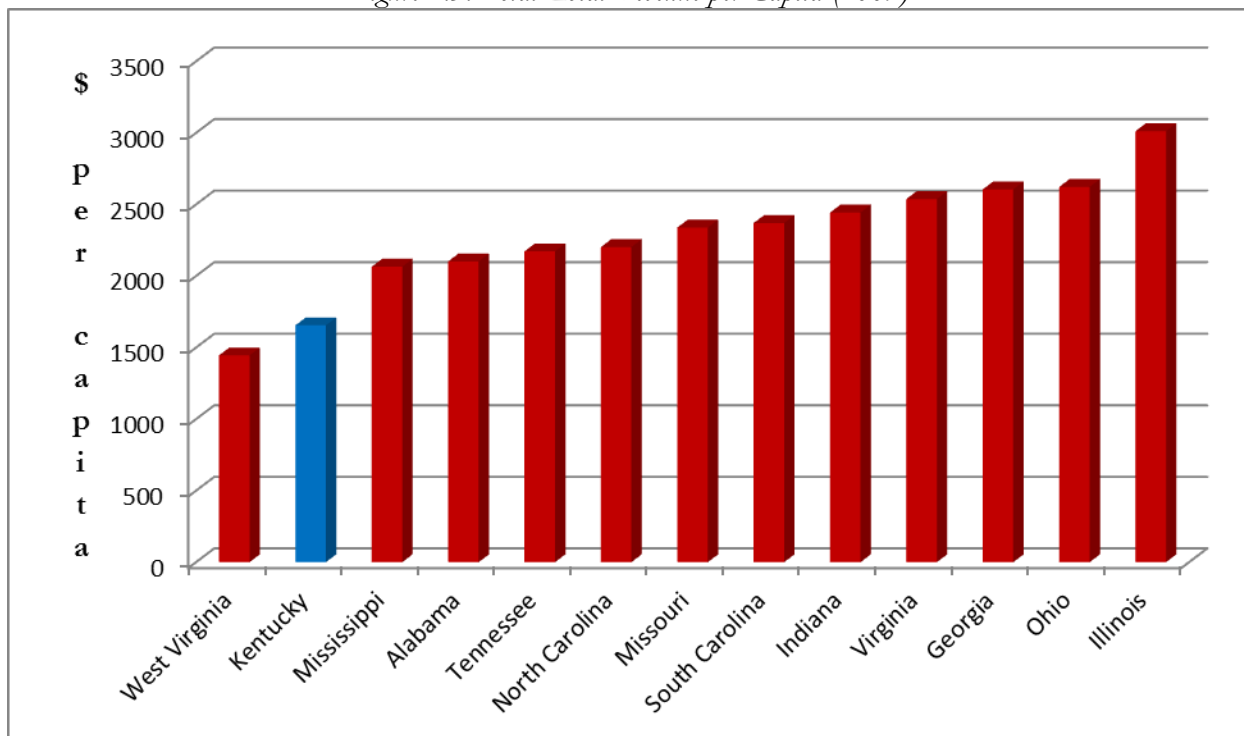
Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

⁵ The weight used is total tax revenue in the state to determine the weighted average.

2.1.1 State and Local Tax Collections

When local taxes are considered along with state taxes, a very different picture of how Kentucky compares to its competitor states emerges. Figure 2.3 illustrates local government revenue collections (per capita) for Kentucky and its competitor states for 2009. The ranking of states is almost the reverse of that for state taxation with West Virginia having the lowest local revenue per capita and Kentucky second lowest with just of \$1,500 per capita in local revenues.

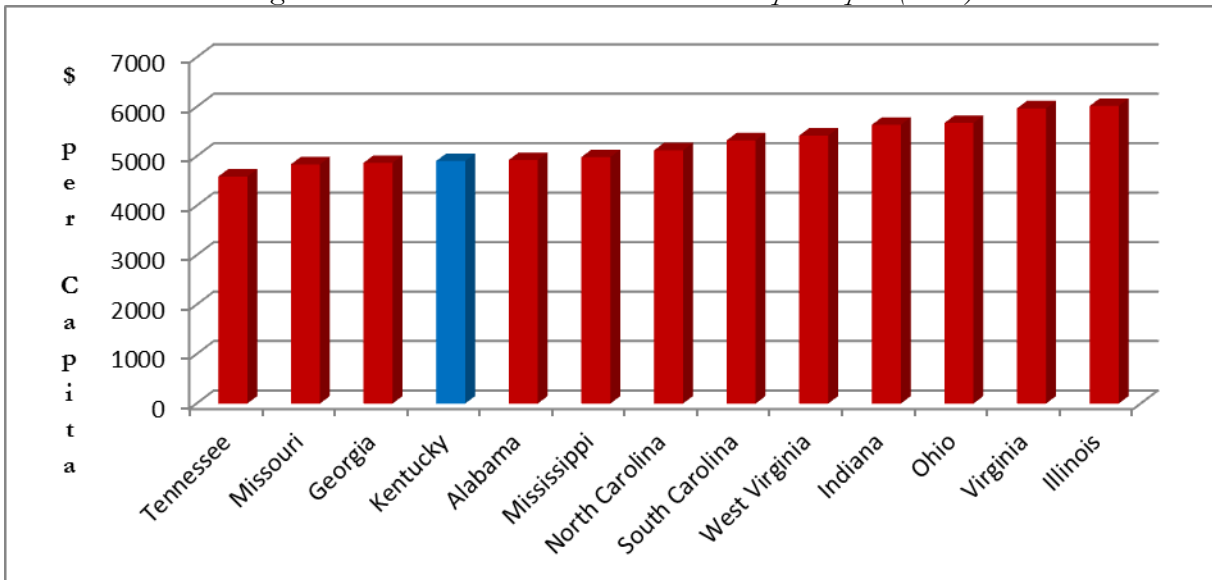
Figure 2.3: Total Local Revenue per Capita (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

Then a comparison of revenue burdens among states requires a consideration of both state and local revenue burdens. In Figure 2.4 we report state and local own revenue burdens for Kentucky and its competitor states in per capita terms for 2009. When both state and local revenues are considered a very different view of Kentucky's tax and revenue burden, relative to its competitors emerges. On a per capita basis, Kentucky ranks tenth among the states in own-source state and local revenue and sixth as a share of income.

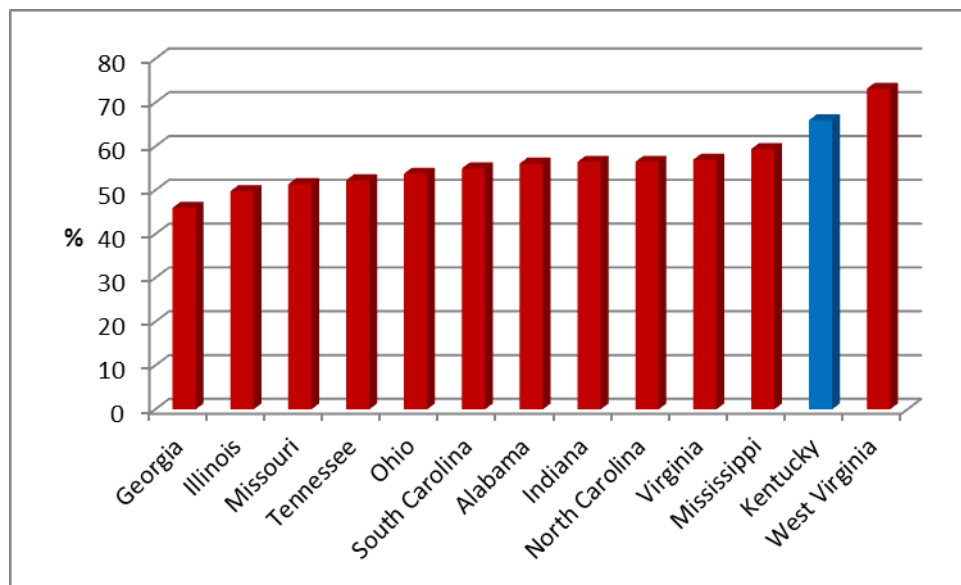
Figure 2.4: State & Local Own Source Revenue per Capita (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

The difference in Kentucky's ranking in state tax burden and state and local tax or own-source burden is due to the fact that revenue collection in Kentucky is much more centralized than in its competitor states. As can be seen in *Figure 2.5*, the state government in Kentucky collects 66.0 percent of state and local own-source revenues; only West Virginia, which collects 73.2 percent through the state, is more centralized. All the other states collect less than 60 percent through state sources with a few (Georgia, Illinois) collecting over 50 percent from local revenue sources.

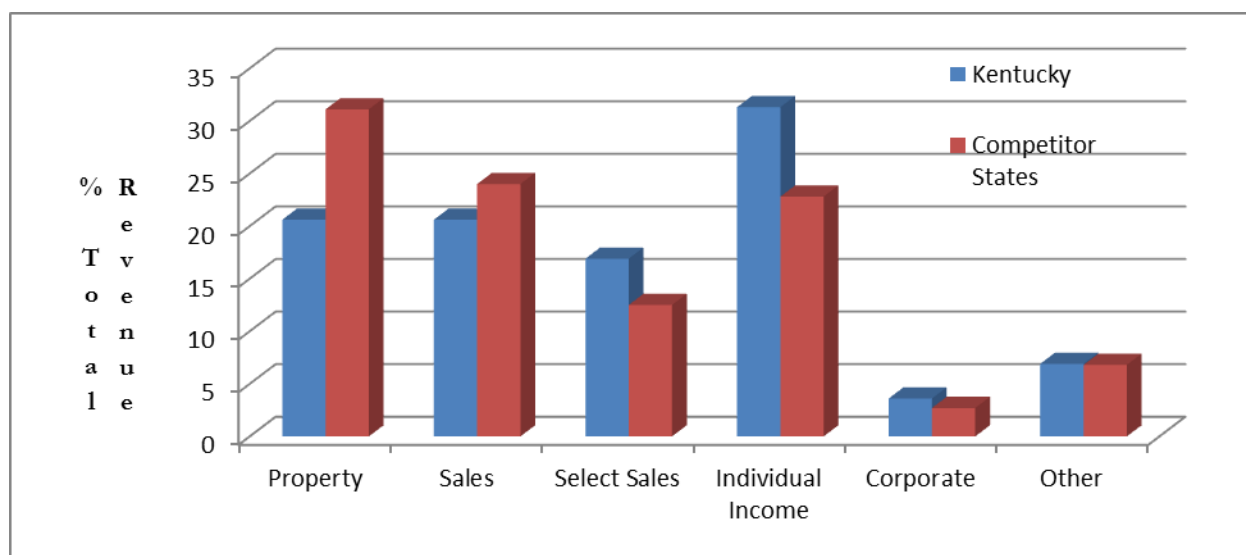
Figure 2.5: State Share of State and Local Revenue, Kentucky and Competitor States (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

Consideration of local taxation not only changes Kentucky's tax burden relative to its competitor states but also its sources of revenue. In *Figure 2.6* we report the percentage of revenue collected by each reported tax source for Kentucky and a weighted-average of its competitor states.⁶ When comparing combined state and local taxes, Kentucky appears less similar to its competitors than when simply comparing state taxes. Kentucky is significantly less reliant on property taxes than its competitors, who raise a much larger share of local tax revenue from the property tax, and particularly those to the north of Kentucky. Kentucky has no general sales tax option for any local governments, something a number of its competitor states (and 35 states in the U.S.) allow. Unlike many of its competitors, Kentucky allows local individual income (occupation license) taxation (only 13 states permit local income taxation). Not surprisingly, then, Kentucky collects a smaller share of combined state and local tax revenues from sales taxation and more from income taxation.

Figure 2.6: State and Local Tax Revenues by Source (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

2.2 *Structural and Rate Differences in Kentucky and Competitor State Taxes*

In the sections of the report that follow, we discuss important issues regarding the performance of the Kentucky tax system and some of the major tax resources in the state. We discuss the adequacy and elasticity of the tax system in the next section, following with some discussion of fairness and the distribution of tax burden in Section 4, and discuss the competitiveness of the tax system in Section 5. However, before discussing these issues of performance, to better understand the performance of the Kentucky tax system we believe it will be instructive to discuss some institutional aspects of the major sources of tax revenue in Kentucky and compare them to those in competitor states. We begin with the individual income tax.

⁶ The weight used is total state and local tax revenue in the state to determine the weighted average.

2.3 *The Individual Income Tax*

Tax Rates and Brackets

Table 2.1 reports the range of tax rates, number of brackets, the lowest and highest income brackets, personal exemptions, and relationship with the federal income tax rate for Kentucky and its competitor states as of January 2012. Kentucky's system is relatively similar to most of its competitors with the obvious exception of Tennessee which only taxes dividends and interest income. Illinois and Ohio have flat rates of 5% and 3.4%, respectively, and on the other end, North Carolina, South Carolina, and West Virginia have top bracket rates of 7.75%, 7.00%, and 6.5%. The income subject to the highest rate varies with Kentucky's being relatively high at \$75,001. Kentucky is in the middle with respect to the level of income at which taxpayers first need to pay (\$3,000) with the flat rate states (Illinois, Indiana) having households pay taxes on all taxable income while Alabama starts taxation after \$500 of taxable income. In contrast, West Virginia does not have households pay on the first \$10,000 of income and North Carolina has no tax on the first \$12,750 for single tax payers and \$21,250 for taxpayers filing jointly.

2.3.1 Tax Treatment of Pensions and Social Security

A significant number of states treat pension income differently from earnings, specifically, exempting at least some of it from taxation. States vary significantly in how much pension income is exempt and the treatment of pensions from different sources: private, federal, state and local, and military. While states can treat private pensions differently from public pensions (federal, state and local, and military) two Supreme Court rulings (*Davis v. Michigan* (489 U.S. 803) and *Barker v. Kansas* (503 U.S. 594) prohibited state and local pensions from receiving exemptions when federal and military pensions do not.

Table 2.2 summarizes the current treatment of pension income and social security by Kentucky and its competitor states. As can be seen in the table, with the exception of Missouri, all of the states exempt social security income from taxation. Alabama, Illinois and Mississippi exempt all pension income from taxation. Kentucky is the next most generous state exempting \$41,110 of each type of pension income from taxation with Georgia having a similar level of exemption (\$35,000). The remainders of the competitor states have very limited exemptions of pension income. Of course, for Tennessee neither labor earnings nor pension income are taxes.

Table 2.1: Personal Income Taxes by State (2012)

State	Tax Rate Range		# of Brackets	Income Brackets		Personal Exemptions			Federal Deductible	Federal Base
				Lowest	Highest	Single	Married	Dependents		
Kentucky	2.00	6.00	6	3000	75001	20 (c)	40 (c)	20 (c)		---
Alabama	2.00	5.00	3	500 (b)	3001 (b)	1500	3000	500 (e)	Yes	AGI
Georgia	1.00	6.00	6	750 (h)	7001 (h)	2700	5400	3000		AGI
Illinois	5.00		1	FLAT		2000	4000	2000		AGI
Indiana	3.40		1	FLAT		1000	2000	2500 (i)		AGI
Mississippi	3.00	5.00	3	5000	10001	6000	12000	1500		AGI
Missouri	1.50	6.00	10	1000	9001	2100	4200	1200	Yes (m)	Taxable
North Carolina	6.00	7.75	3	12750 (p)	60000 (p)	1150	2300	1150		AGI
Ohio (a)	0.59	5.93	9	5100	204200	1650 (r)	3300 (r)	1650 (r)		Taxable
South Carolina	0.00	7.00	6	2800	14000	3700 (d)	7400 (d)	3700 (d)		---
Tennessee	State Income Tax of 6% on Dividends and Interest Income Only					1250	2500			AGI
Virginia	2.00	5.75	4	3000	17001	930	1860	930		AGI
West Virginia	3.00	6.50	5	10000	60000	2000	4000	2000		0

Source: The Federation of Tax Administrators from various sources.

(a) 17 states have statutory provision for automatically adjusting to the rate of inflation the dollar values of the income tax brackets, standard deductions, and/or personal exemptions. Because the inflation-adjustments for 2012 are not yet available in some cases, the table may report the 2011 amounts.

(b) For joint returns, taxes are twice the tax on half the couple's income.

(c) The personal exemption takes the form of a tax credit instead of a deduction.

(d) These states use the personal exemption amounts provided in the federal Internal Revenue Code.

(e) In Alabama, the per-dependent exemption is \$1,000 for taxpayers with state AGI of \$20,000 or less, \$500 with AGI from \$20,001 to \$100,000, and \$300 with AGI over \$100,000.

(h) The Georgia income brackets reported are for single individuals. For married couples filing jointly, the same tax rates apply to income brackets ranging from \$1,000, to \$10,000.

(i) In Indiana, includes an additional exemption of \$1,500 for each dependent child.

(m) The deduction for federal income tax is limited to \$5,000 for individuals and \$10,000 for joint returns in Missouri.

(p) The income brackets reported for North Carolina are for single individuals. For married taxpayers filing jointly, the same tax rates apply to income brackets ranging from \$21,250, to \$100,000.

(r) Ohio provides an additional tax credit of \$20 per exemption. 2012 tax rates and brackets reported.

Table 2.2: Tax Treatment of Pensions and Social Security (2009)

State	Exemption Amount					Age Minimum	Income Restrictions
	Social Security	Private	Military	Federal	State & Local		
Alabama	Full	Full	Full	Full	Full	No	No
Georgia	Full	\$35,000	\$35,000	\$35,000	\$35,000	Yes (62)	No
Illinois	Full	Full	Full	Full	Full	No	No
Indiana	Full	None	\$2,000	\$2,000	None	Yes (62)	No
Kentucky ¹	Full	\$41,110	\$41,110	\$41,110	\$41,110	No	No
Mississippi	Full	Full	Full	Full	Full	No	No
Missouri	None	\$4,000 applied to cap	\$6,000 (single) \$12,000 (joint)	\$6,000 (single) \$12,000 (joint)	\$6,000 (single) \$12,000 (joint)	No	Yes
North Carolina	Full	\$2,000 (single) \$4,000 (joint)	\$4,000 (single) \$8,000 (joint)	\$4,000 (single) \$8,000 (joint)	\$4,000 (single) \$8,000 (joint)		No
Ohio	Full	A retirement income tax credit of up to \$200 is allowed, depending on income.					No
South Carolina	Full	\$3,000 (Under 65) \$10,000 (Over 65)	\$3,000 (Under 65) \$10,000 (Over 65)	\$3,000 (Under 65) \$10,000 (Over 65)	\$3,000 (Under 65) \$10,000 (Over 65)		No
Tennessee		State Income Tax only applies to Interest and Dividends					NA
Virginia	Full	\$12,000	\$12,000	\$12,000	\$12,000	Yes (65)	No
West Virginia	Full	None	\$2,000 + amount based on years of service	\$2,000	Full for Public Safety; \$2,000 for other	No	No

Sources: State Taxation of Social Security and Pensions in 2006, Issue Brief AARP;

OLR Report, State Income Taxes on Pensions, State of Connecticut, July 16, 2008 <http://www.cga.ct.gov/2008/rpt/2008-R-0413.htm>

¹Pensions fully exempt for those received prior to July 1, 1998.

²A senior citizen tax credit of \$25 per tax return is allowed to filers age 65+. A one-time tax credit is available for lump-sum distributions to people over 65. The credit is \$50 multiplied by remaining life expectancy

2.3.2 State Earned Income Credit Programs

The Federal Earned Income Credit (EIC) program was created in 1975 to provide relief from payroll taxes for low-income working family households (households with dependents under eighteen years of age). The program has now been expanded to include households without children with low incomes but employed. Unlike most cash transfer programs, the payment from EIC increases with earnings at low earnings levels with each \$1.00 of earnings increasing EIC payments by \$0.40. At higher levels of earnings the payment is reduced \$0.21 for every \$1.00 of earnings. The payments and eligibility depend on the household. For single person households with no children the maximum level of earnings the household could have is \$13,660. A married household with no children is eligible as well household earnings are less than \$18,740. Both households could receive a maximum credit of \$464. In contrast a married household with two

children with earnings of less than \$46,044 is eligible. The maximum benefit received by this type of household is \$51,112.⁷

Most of the twenty-two states and District of Columbia that have a state EIC “piggyback” on the federal EIC, that is, the state EIC is some fraction of the Federal EIC. States differ in whether the credit is refundable or non-refundable. A refundable credit is one in which the taxpayer can receive a check for the difference between the amount of the credit and income tax liability when the credit exceeds the tax liability. A nonrefundable credit can only be used to offset income tax liability – no checks are ever sent to taxpayers.

As *Table 2.3* shows, three of Kentucky’s competitor states, Illinois, Indiana, and Virginia, have state EITC programs. All piggyback off the federal EITC. Like other state EITC programs that are nonrefundable, the benefit is much greater in Virginia than the two competitor states, Illinois and Indiana, which have refundable credits. This is due in large part to the fact that a nonrefundable program does not have to write checks.⁸

Table 2.3: State Earned Income Credit Programs

State	Refundable	Structure
Illinois	Refundable	5% of Federal EITC
Indiana	Refundable	6% of Federal EITC
Virginia	Nonrefundable	20% of Federal EIC

From: Meade and Ziliak (2006).

To give some indication of the magnitude of the credit and how it varies with income, in *Table 2.4* we provide a schedule for the federal credit for married household with two children as well as the credits for the three competitor states that have EIC piggyback programs. The maximum credit is obtained at incomes between 12,500 and 16,700 with credit declining after until the household is no longer eligible at an income of 40,950. Note that the maximum credit in Illinois is \$256 and \$307 in Indiana. In Virginia the maximum credit is \$1,022 but this is a refundable credit so households without any income tax liability receive no credit.

⁷Information is from the IRS website, <http://www.irs.gov/publications/p596/apa.html>.

⁸ Much of this discuss is adapted from E. Meade and J. Ziliak, “A State Earned Income Tax Credit: Issues and Options for Kentucky, University of Kentucky Center for Poverty Research Policy Insight #2, 2006. <http://www.ukcpr.org/Publications/PolicyInsights-No2.pdf>

Table 2.4: 2010 Federal Earned Income Credit Schedule and State Schedules

Income	Federal EITC	Illinois 5% EITC	Indiana 6% EITC	Virginia 20%EITC
2,000	810	41	49	162
4,000	1,610	81	97	322
6,000	2,410	121	145	482
8,000	3,210	161	193	642
10,000	4,010	201	241	802
12,000	4,810	241	289	962
14,000	5,112	256	307	1022
16,000	5,112	256	307	1022
18,000	4,831	242	290	966
20,000	4,411	221	265	882
22,000	3,991	200	239	798
24,000	3,571	179	214	714
26,000	3,151	158	189	630
28,000	2,731	137	164	546
30,000	2,311	116	139	462
32,000	1,891	95	113	378
34,000	1,471	74	88	294
36,000	1,051	53	63	210
38,000	631	32	38	126
40,000	211	11	13	42

Source: Authors' calculations and 2011 IRS 1040 instruction book

2.4 General Sales and Selective Sales Taxes

2.4.1 General Sales Taxes

Table 2.6 lists state sales tax rates, exemptions and vendor discounts for Kentucky and its competitor states current as of January 1, 2012. Also listed are the average combined state and local sales taxes. As can be seen in *Table 2.5*, Kentucky's 6% state sales tax rate is the same as two other states, lower than four states, and above the rate in six states. However, as can be seen in both *Table 2.5* and *Figure 2.7* when Kentucky combined state and local sales tax rate is compared with its competitor states only Virginia has a lower average combined rate. The reason, for this difference in rankings is, of course, due to the fact that Kentucky has no local option sales tax unlike nine of its competitors. Like five of its competitors, exempts food from the sales tax; five states that do tax food, tax it at a lower rate. With the exception of a 1% tax by Illinois, Kentucky and its competitors do not tax prescriptions but almost all tax nonprescription medication.

Table 2.5: General Sales Taxes by State (2012)

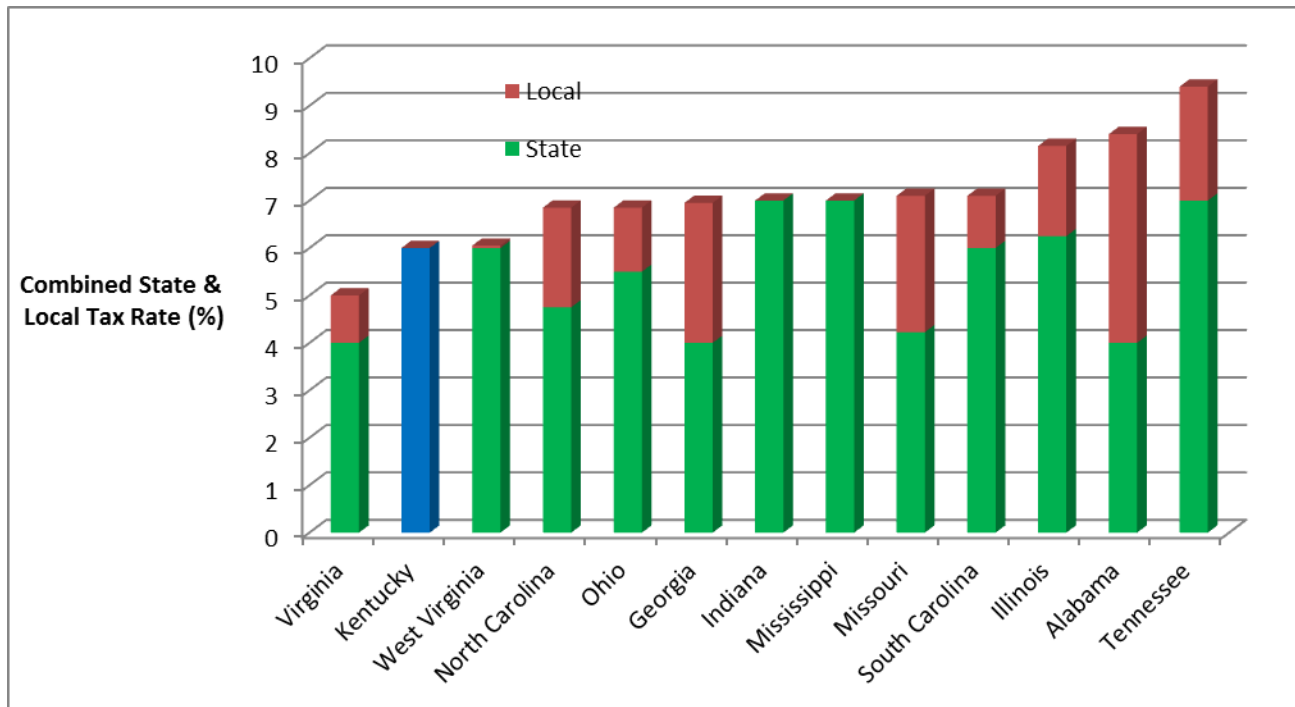
State Sales Tax			State and Local Combined		Exemptions			
State	Rate	Rank	Average Combined Rate	Rank	Vendor Discount	Food (%)	Prescriptions	Non-prescriptions
Kentucky	6.0	5	6.0	12	1.75-1.0 (1)	*	*	
Alabama	4.0	11	8.4	2	5.0-2.0 (1)		*	
Georgia	4.0	11	6.95	8	3.0-0.5 (1)	*	*	
Illinois	6.25	4	8.15	3	1.75	1	1%	1%
Indiana (1)	7.0	1	7.0	6	0.73 (2)	*	*	
Mississippi	7.0	1	7.0	6	2.0		*	
Missouri	4.225	10	7.1	4	2.0	1.225	*	
North Carolina	4.75	9	6.85	9	None	*	*	
Ohio	5.5	8	6.85	9	0.75	*	*	
South Carolina	6.0	5	7.1	4	3.0-2.0 (1)	*	*	
Tennessee	7.0	1	9.4	1	None	5.5	*	
Virginia (2)	4.0	11	5.0	13	3.0-1.5 (8)	2.5 (2)	*	*
West Virginia	6.0	5	6.05	11	None	2	*	

Source: Compiled by Federation of Tax Administrators (FTA) (http://www.taxadmin.org/fta/rate/tax_stru.html) and the Sales Tax Clearinghouse (<http://thetstc.com/strates.stm>)

(1) Utilities are not permitted to take discount. Collection allowances are 0.73% if total sales tax collected is less than \$60,000; 0.53% if total tax is between \$60,000 and \$600,000; 0.26% if total sales tax collected is more than \$600,000.

(2) Rate does not include a statewide local rate of 1.0% in VA.

Figure 2.7 Combined State and Local Tax Rates (%) for Kentucky and Competitor States (2011)



Source: The Sales Tax Clearinghouse (<http://thetstc.com/strates.stm>)

Sales Taxation of Services

The basis of most state sales tax systems has been tangible products, with the vast majority of services purchased by households exempt from the sales tax. Even though a minority of services available are taxed by states there is still significant variation in the extent of taxation of services among state. Exceptions are Hawaii, New Mexico, and South Dakota that broadly tax services. *Table 2.6* provides a summary of taxation of services by Kentucky and its competitor states.

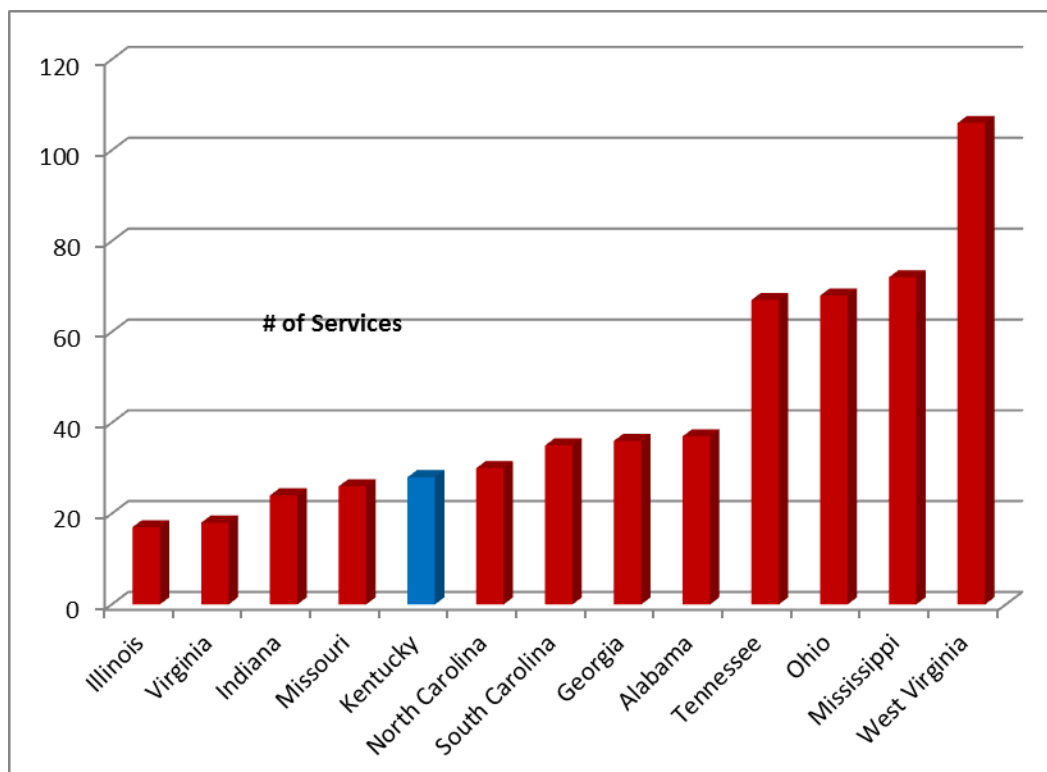
As can be seen more clearly in *Figure 2.8*, Kentucky taxes relatively few services when compared to its competitor states, ranking fifth lowest in service taxation. In evaluating the taxation of services, it is important to note that *Table 2.6* includes both business and consumer services. While Kentucky taxes fewer entertainment services (admissions and amusements) and automotive services than its competitors, much of the difference between Kentucky and its competitors that do tax a large number of services can be attributed to differences in the taxation of business services including agricultural services, industrial and mining services, construction, transportation, and storage. If attention is focused on consumer services, Kentucky base is not as comparatively narrow as when all services are considered.

Table 2.6 Sales Taxation of Services by Kentucky and Competitor States (2010)

	Alabama	Georgia	Illinois	Indiana	Kentucky	Mississippi	Missouri	North Carolina	Ohio	South Carolina	Tennessee	Virginia	West Virginia
Basic Sales Tax Rate	4	4	6.25	6	6	7	4.225	4.25	5.5	6	7	5	6
Totals													
Agricultural Services	0	0	0	1	0	2	0	0	1	0	1	0	3
Industrial and mining services	0	0	0	0	0	3	0	0	0	0	0	1	1
Construction	0	0	0	0	0	4	0	0	0	0	0	0	1
Utilities	12	10	12	7	11	10	8	10	8	4	11	1	6
Transportation	0	3	0	0	0	1	1	0	2	0	1	0	4
Storage	0	0	0	1	0	5	0	0	4	0	1	0	6
FIRE (Finance, Insurance, Real Estate)	0	0	0	0	0	0	0	0	0	0	0	0	2
Personal services	2	4	1	4	2	5	1	4	12	6	10	3	17
Business services	6	5	1	3	4	8	2	5	14	7	7	4	27
Computer services	3	2	1	2	0	3	2	0	5	4	3	0	4
Automotive services	0	0	0	0	0	4	0	0	4	0	5	0	5
Admissions and amusements	10	8	0	3	6	11	10	9	3	10	12	1	13
Professional services	0	0	0	0	0	0	0	0	0	0	0	0	1
Leases	2	3	1	2	1	2	2	1	3	2	2	4	3
Fabrication, repair and installation	1	1	1	1	4	13	0	1	12	1	13	4	13
Miscellaneous	1	0	0	0	0	1	0	0	0	1	1	0	0
Non-exempt entries	37	36	17	24	28	72	26	30	68	35	67	18	106

Source: FTA, Survey of Sales Taxation of Services by States, 2007 (update 2010),
<http://www.taxadmin.org/fta/pub/services/services.html>

Figure 2.8: Number of Tax Services by Kentucky and Competitor States (2010)



Source: FTA, Survey of Sales Taxation of Services by States, 2007 (update 2010) ,
<http://www.taxadmin.org/fta/pub/services/services.html>

2.4.2 Selective Sales Taxes

Table 2.7 lists the selective sales tax rates on gasoline, diesel fuel, cigarettes and other tobacco products for Kentucky and its competitor states as of January 1, 2012. These are taxes imposed on retail sales and do not include taxes imposed on distribution or production, some of which might be quite significant. Inspection of Figure 2.9A shows that Kentucky has the second highest tax on gasoline at \$0.295 per gallon. In Figure 2.9B the tax rates on cigarettes are illustrated. Kentucky, at \$0.60 per pack is the sixth highest among its competitors.

While the tax rate on gasoline in Kentucky is currently \$0.295 per gallon, in fact, unlike its competitors, the tax on gasoline is not a fixed amount but instead an ad-valorem tax based on the current price of gasoline. The tax is 9% of the average wholesale price (AWP) of the first month of each quarter plus a \$0.05 per gallon supplemental highway user tax and \$0.014 per gallon environmental fee. The AWP may not increase by more than 10% over the AWP at the close of previous year but the AWP can decrease by more than 10% during a year. If this occurs, there is a floor on AWP for purposes of calculating the tax of \$1.786 meaning that the 9% tax is \$0.161 per gallon and the total minimum tax including the \$0.05 highway user tax per gallon and \$0.014 environmental fee per gallon makes a minimum tax of \$0.225 per gallon.

Table 2.7: Selective Sales Taxes for Tobacco and Alcohol by State (2011 and 2012)⁹

State	Fuel		Tobacco	
	Gasoline	Diesel	Cigarettes	Other(3)
	(\$ per gallon)		(\$ per pack)	
Kentucky	0.295 (1)	0.234	0.60	15% WP
Alabama	0.16	0.19	0.425	0.03-0.405
Georgia	0.075	0.075	0.37	0.025
Illinois	0.19	0.215	0.98	18% WP
Indiana	0.18	0.16	0.995	24% WP
Mississippi	0.18	0.18	0.68	15% MP
Missouri	0.17	0.17	0.17	10% MP
North Carolina	0.389	0.389	0.45	12.8% WP
Ohio	0.28	0.28	1.25	17% WP
South Carolina	0.16	0.16	0.57	5% MP
Tennessee	0.20	0.17	0.62	6.6% WP
Virginia	0.175	0.175	0.30	10% MP
West Virginia	0.205	0.205	0.55	7% WP

Source: Tax Foundation (<http://taxfoundation.org/tax-topics/state-tax-and-spending-policy>) and Federation of Tax Administrators (http://www.taxadmin.org/fta/rate/tax_stru.html)

- (1) Tax on gasoline and diesel is 9% of average wholesale price (2) All sales of alcohol in these states also subject to the state sales tax; (2) The government directly controls the sales of distilled spirits in these states. (3) WP denotes wholesale price and MP denotes manufacturing price. (4) Includes the wholesale tax rate of 11%, converted to a gallon excise tax rate. (5) Includes case fees and/or bottle fees which may vary with the size of the container. (6) Includes sales taxes specific to alcoholic beverages. (7)) Local excise taxes excluded.

The taxation of alcohol, particularly in Kentucky, is more complicated, than most other goods. In addition to excise taxes, alcohol is subject to the general sales tax, and in Kentucky wholesale tax as well as case taxes. As shown in Table 2.8, primarily because of the wholesale taxes on alcohol products, Kentucky has high taxes on alcohol – highest on wine among competitor states, second highest for beer, and among those states with unregulated sales, second highest for distilled spirit.

⁹Tax rates for cigarettes and tobacco are as of January 1, 2012 while taxes on alcohol are as of September 1, 2012.

Table 2.8: *Tax Rates on Alcohol Products*

	Beer				Wine				Distilled Spirits			
	Excise	Sales Tax	Other Taxes	Effective Rate	Excise	Sales Tax	Other Taxes	Effective Rate	Excise	Sales Tax	Other Taxes	Effective Rate
Kentucky	0.08	Yes	11%WP	23.96	0.50	Yes	11% WP	3.20	1.92	Yes	11%WP, 0.05 case; <6% .25;	6.85
Alabama	0.53	Yes	0.52 local	33.17	1.70	Yes	over 14% sold in State Store	1.70	State Store Sales Only			
Georgia	0.32	Yes	0.53 local	30.73	1.51	Yes	over 14% - 2.54; 0.83 local	1.51	3.79	Yes	0.83 local	3.79
Illinois	.235	Yes	0.29 in Chicago/.06 Cook	9.15	1.39	Yes	over 20% 8.55; 0.36 in Chicago 0.16-0.30 Cook	1.39	8.55	Yes	< 20% 1.39; 2.68 in Chicago/ 2.00 in Cook	8.55
Indiana	.115	Yes		5.89	0.47	Yes	over 21% 2.68	0.47	2.68	Yes	<15% 0.47	2.68
Mississippi	.4268	Yes		13.23	0.35	Yes	over 14% sold in State Store		State Store Sales Only			
Missouri	.06	Yes		1.86	0.30	Yes		0.42	2.00	Yes		2.00
North Carolina	.53	Yes		19.13	0.79	Yes	over 17% 0.91	1.06	State Store Sales Only			
Ohio	.18	Yes		6.13	0.30	Yes	over 14% 0.98	0.32	State Store Sales Only			
South Carolina	.77	Yes		23.81	0.90	Yes	0.18	1.08	2.72	Yes	5.36 case 9% surtax; 5% additional premise	5.42
Tennessee	.14	Yes	17 WP	37.00	1.21	Yes	0.15/case & 15% on premise	1.27	4.40	Yes	0.15 case' 15% premise < 7% 1.10	4.46
Virginia	.26	Yes		8.69	1.51	Yes	under 4% 0.26 & over 14% in state	1.51	State Store Sales Only			
West Virginia	.18	Yes		5.50	1.00	Yes	5% local	1.00	State Store Sales Only			

Source: Federation of Tax Administrators, http://www.taxadmin.org/fta/rate/tax_stru.html (rates) and Beer Institute (effective rate for Beer) and Tax Foundation

2.5 *Corporate Income Tax Rates*

Table 2.9 reports state corporate income tax rates, tax bracket information, and apportionment formulas for Kentucky and its competitor states as of January 1, 2002. Unlike most of its competitors, Kentucky has more than a single rate, having three brackets with the tax rate ranging for 4 to 6 % with the 6 % effective after \$50,000. Kentucky's 6 % top rate is lower than most of its competitor states, particularly Illinois, Indiana, and West Virginia and is below the median state's rate. Kentucky apportions its corporate income tax on Double Standard Sales with equal weights on sales, property, and payroll. Four of its competitor states apportion using double weighted sales while four states apportion using sales only.

Effective July 1, 2005 Ohio replaced its corporate income tax with a Commercial Activity Tax (CAT). The CAT applies annual tax to the gross receipts of all business in Ohio, including retailers, services, manufacturing, and other businesses with some exclusions for financial institutions, public utilities, and other businesses that may pay other specific Ohio taxes. In addition to its 7.0% corporate income tax Illinois has a net replacement tax, as of January 1, 2011 a tax of 2.5% on corporate net income less allowed investment credits.

In 2006 Kentucky imposed the Limited Liability Entity Tax (LLET) on all firms with limited liability including C-corporations, S-corporations and LLCs. The LLET imposes the minimum of 0.75 percent on profits or .095 percent of gross receipts. Limited liability entities with gross receipts under \$3.0 million pay \$175 in tax. Companies paying the corporate income tax are permitted a non-refundable credit against the LLET for corporate income taxes that are paid, which means that the LLET imposes a minimum tax on limited liability firms. However, unlike many other states, such as Tennessee, Kentucky does not impose the corporate income tax on LLCs. Failure to impose the corporate income tax on LLCs allows a tax planning opportunity by operating LLCs with a member that is located in a state (such as Delaware) that does not impose tax on the earnings from intangible assets.

Table 2.9: State Corporate Income Taxes (2012)

State	Tax Rate Range		Number of Brackets	Tax Brackets		Tax Rate Financial Institutions	Federal Income Tax Deductible	Apportionment Formulas
	Lowest	Highest		Lowest	Highest			
Kentucky*	4	6	3	50,000		100001	--- (a)	Double std Sales
Alabama*	6.5		1	---Flat Rate---		6.5	Yes	Double wtd Sales
Georgia	6		1	---Flat Rate---		6		Sales
Illinois*	9.5 (i)		1	---Flat Rate---		9.5 (i)		Sales
Indiana	8.5 (j)		1	---Flat Rate---		8.5		Sales
Mississippi	3	5	3	5,000	10001	3.0 - 5.0		Sales/Other (2)
Missouri*	6.25		1	---Flat Rate---		7	Yes (k)	3 Factor/Sales
North Carolina*	6.9		1	---Flat Rate---		6.9 (t)		Double wtd Sales
Ohio	(u)		0			--- (u)		Triple wtd Sales (3)
South Carolina	5		1	---Flat Rate---		4.5 (w)		Sales
Tennessee	6.5		1	---Flat Rate---		6.5		Double wtd Sales
Virginia	6		1	---Flat Rate---		6		Double wtd Sales
West Virginia*	7.5 (y)		1	---Flat Rate---		7.5 (y)		Double wtd Sales

Source: Compiled by FTA from various sources

(a) Rates listed are the corporate income tax rate applied to financial institutions or excise taxes based on income.

Some states have other taxes based upon the value of deposits or shares.

(i) The Illinois rate of 9.5% is the sum of a corporate income tax rate of 7.0% plus a replacement tax of 2.5%.

(j) The Indiana tax rate is scheduled to decrease to 8% on July 1, 2012.

(k) 50% of the federal income tax is deductible.

(t) In North Carolina financial institutions are also subject to a tax equal to \$30 per one million in assets.

(u) Ohio no longer levies a tax based on income (except for a particular subset of corporations), but instead imposes a Commercial Activity Tax (CAT) equal to \$150 for gross receipts used to Ohio of between \$150,000 and \$1 million, plus 0.26% of gross receipts over \$1 million. Banks continue to pay a franchise tax of 1.3% of net worth. For those few corporations for whom the franchise tax on net worth or net income still applies, a litter tax also applies.

(w) South Carolina taxes savings and loans at a 6% rate.

(y) West Virginia's corporate rate is scheduled for reduction as follows: 7.0% after 2012, 6.5% after 2013.

(2) Mississippi provides different apportionment formulas based on specific type of business. A single sales factor formula is required if no specific business formula is specified.

(3) Formula for franchise tax shown. Department publishes specific rules for situs of receipts under the CAT tax.

The formulas listed are for general manufacturing businesses. Some industries have a special formula different from the one shown.

* State has adopted substantial portions of the UDITPA (Uniform Division of Income Tax Purposes Act). Slash (/) separating two formulas indicates taxpayer option or specified by state rules.

3 Factor = sales, property, and payroll equally weighted. Double wtd Sales = 3 factors with sales double-weighted
Sales = single sales factor.

2.6 Severance Taxes

A description of severance taxes is found in Judy Zelio and Lisa Houlihan (2012)¹⁰:

Severance taxes are excise taxes on natural resources "severed" from the earth. They are

¹⁰Source: Judy Zelio and Lisa Houlihan, "State Energy Revenues Update," National Conference of State Legislatures, (2012).

measured by the quantity or value of the resource removed or produced. In the majority of states, the taxes are applied to specific industries such as coal or iron mining and natural gas or oil production. They are usually payable by the severer or producer, although in a few states payment is made by the first purchaser. The taxes usually are imposed at a flat rate per unit of measure, with coal and ore mining taxes levied on a tonnage basis, oil production taxes on a per barrel basis, and gas production taxes on a per foot basis, although the rates may be graduated based on volume of production or value of the products. "Value" may mean market value in some states and gross value in others. Taxable net value or net proceeds are determined by deducting certain items from the gross value or gross proceeds. Examples of deductions include production costs, ad valorem taxes and royalties paid. Evaporation for gas wells also might qualify as a deduction.

Kentucky's coal severance tax was enacted in 1972 and expanded in 1978 to include both the severance (mining) and processing of coal in Kentucky. Since 1981, other minerals and natural gas and natural gas liquids were subject to taxation under the Natural Resources Severance and Processing tax. The tax rate for both coal and natural resource severances has been 4.5% of gross value, though coal also has a minimum tax of fifty cents per ton. Transportation expenses and coal purchased for processing from a taxpayer registered for coal tax are deductible. Similar exemptions apply to the natural resources severance tax.¹¹

Since 1992, 50% of revenues from both the coal and the natural resource severance taxes are allocated to local governments in the coal and mineral mining regions of eastern and western Kentucky.¹²

As *Table 2.10* shows, there is a great deal of variety among Kentucky and its competitor states in the products subject to severance or similar taxes as well as whether the tax is used at all. *Figure 2.11* shows the percentage of state tax revenue collected from severance taxes for 2011 for Kentucky, the United States, an average of its competitor states, and each competitor state. Some caution should be taken in interpreting as some states may collect revenues from natural resources, particularly timber, using property taxes based on value rather than severance taxes based on revenues. Still, the ranking of the states is not too surprising and reflects the importance of coal to the economy of Kentucky and West Virginia. In 2010, coal mining accounted for 8.37% of West Virginia's gross state product (GSP) and 2.43% of Kentucky gross state product.¹³

¹¹From *Tax Expenditure Analysis: Fiscal Year 2012-2014*, Governor's Office for Economic Analysis, Office of the State Budget Director, Commonwealth of Kentucky.

¹²From Jason Bailey, *Promoting Long-Term Investment in Appalachian Kentucky: A Permanent Coal Severance Tax Fund*, Mountain Association for Community Economic Development (MACED)/Kentucky Center for Economic Policy (KCEP) (March 2012) (http://www.maced.org/files/MACED_Coal_Severance_Tax_Brief.pdf)

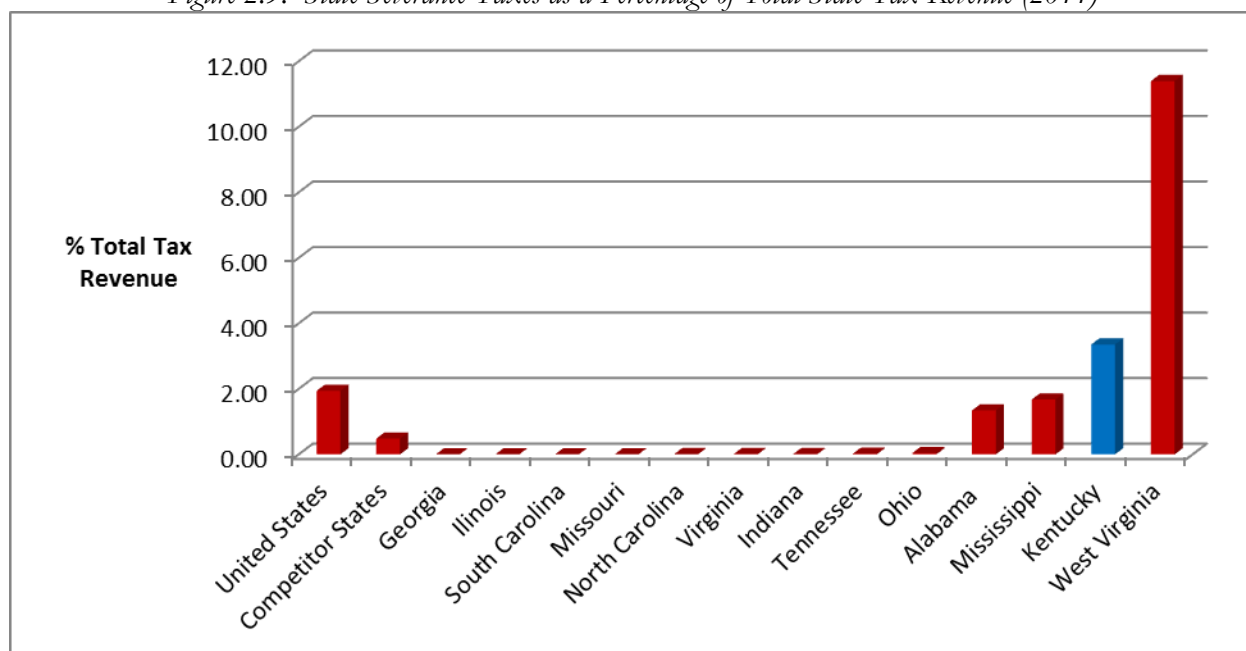
¹³Bureau of Economic Activity, Regional Data, GDP & Personal Income (<http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1>).

Table 2.10: Severance Taxes Imposed by Kentucky and Competitor States

Alabama	Coal and lignite severance tax; Coal severance tax Forest products severance tax; Iron ore mining tax Local taxes; Oil and gas conservation and production tax Oil and gas production tax
Georgia	Tax on phosphates
Illinois	Timber fee
Indiana	Petroleum production tax
Kentucky	Coal severance tax; Natural resource severance tax Oil production tax
Mississippi	Local taxes; Oil and gas severance tax; Salt severance tax Timber severance tax
Missouri	Assessment on surface coal mining permittees
North Carolina	Oil and gas conservation tax Primary forest product assessment
Ohio	Oil and Gas Marketing Program Assessment Resource severance tax
South Carolina	(No taxes imposed)
Tennessee	Coal severance tax; Local taxes; Oil and gas severance tax
Virginia	(No taxes imposed)
West Virginia	Severance taxes

Source: Judy Zelio and Lisa Hoiulihan, “State Energy Revenues Update,” National Conference of State Legislatures, (2012)

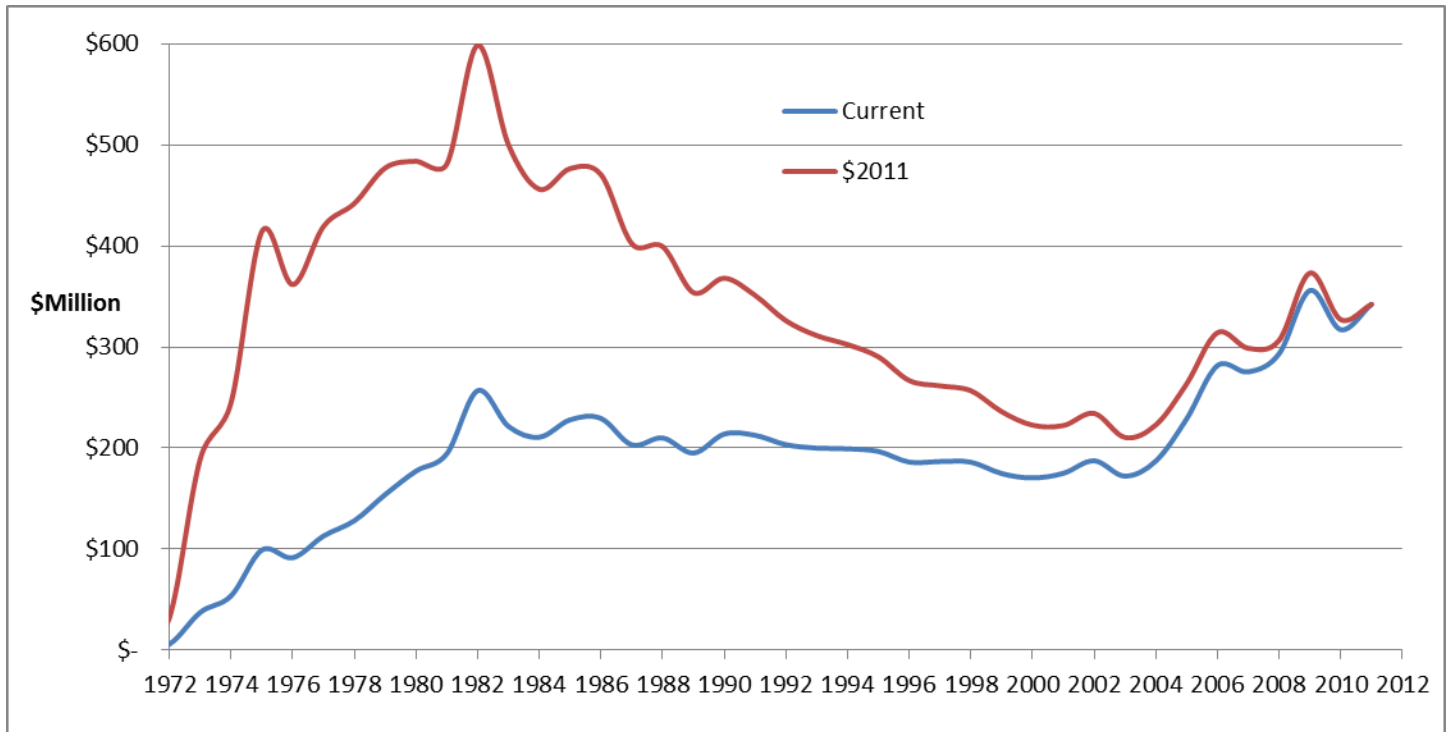
Figure 2.9: State Severance Taxes as a Percentage of Total State Tax Revenue (2011)



Source: *State Tax Collection 2011*, Census Bureau, U.S. Department of Commerce, Washington, DC.

Finally, *Figure 2.12* shows trends in severance tax revenue, both unadjusted (current) and adjusted for inflation (\$2011). Most apparent from the figure is the variation in this revenue stream. The rapid increase in revenues from 1972 to 1978 reflects the inclusion of processing into the tax base. As the revenue is collected from an ad-valorem tax, total revenue depends on both quantity mined and processed and the price of coal. Hence much of the variation in this revenue stream reflects changes in coal prices and coal production in Kentucky.

Figure 2.10: Trends in Kentucky Severance Tax Revenues, Nominal and Real (\$2011)



Source: State Government Tax Collections, various years, Census Bureau, U.S. Department of Commerce, Washington DC.

3. Adequacy and Elasticity

Kentucky faces a structural deficit that could reach \$1 billion by 2020. Fundamental tax reform that improves the elasticity in the system—ensuring that tax revenues grow adequately with the economy—will go a long way toward solving Kentucky’s structural deficit. Addressing this structural deficit promises to become more difficult in the future since the underlying economic, demographic, and political trends reducing elasticity are continuing and show no sign of abating.¹⁴ Moreover, there are a number of financial factors likely to intensify state-level budgetary pressures in the future, such as Kentucky’s \$30 billion unfunded pension obligation¹⁵ and long-term fiscal problems at the federal level.¹⁶

3.1 *Kentucky’s Structural Deficit*

Revenue growth in Kentucky has slowed in the last several years, especially when compared to earlier periods. From 2000 to 2011, tax revenue failed to keep pace with the economy or declined more than the economy¹⁷ in eight years while revenue growth exceeded economic growth in three years. Meanwhile, the demand for public services, such as education, health care, and infrastructure maintenance and development, continues, and can be expected to grow at about the same rate as the economy. If the revenue trend demonstrated from 2000 to 2008¹⁸ continues to 2020, then state government would decrease to below 6.5 percent of the economy—a level not seen since 1968 when it was 5.9 percent.¹⁹ By 2020, tax revenue would be more than a \$1 billion short of expected demand for public services (see Figure 3.1).

There are three broad approaches that can be used to address the projected shortfall. First, the size of state government can be decreased. Second, higher tax rates can be implemented. Third, the elasticity can be increased so that revenues will grow with the economy. The third option, which typically entails lower rates and a broader base, is the preferred approach because it generally will lead to more robust growth in revenue as the economy grows.

¹⁴ For a comprehensive discussion of these issues see David Brunori, *State Tax Policy: A Political Perspective*, Third Edition (Washington, D.C.: The Urban Institute Press, 2011).

¹⁵ “Kentucky legislative panel considers bond issue to shore up troubled pension systems,” *Courier-Journal*, September 1, 2012.

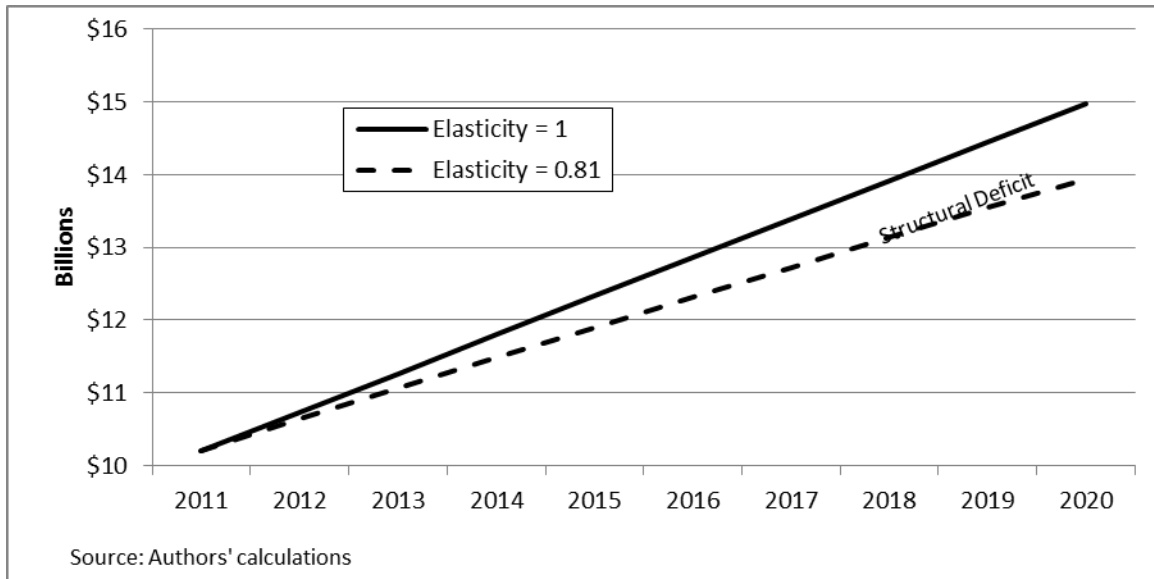
¹⁶ *Report of the State Budget Crisis Task Force*, July 2012, available online at: www.statebudgetcrisis.org.

¹⁷ Kentucky tax revenue declined by 3.1% and personal income declined by 1.2% in 2009—the trough year of the Great Recession.

¹⁸ Given the extraordinary nature of the Great Recession in the late 1990s we do not include data from 2009-2011 in this analysis.

¹⁹ In 1969 the size of state government (tax revenue) relative to the economy (personal income) jumped to 6.9 percent after the general sales tax was increased from 3 to 5 percent.

Figure 3.1: Simulated Kentucky Tax Revenue



3.2 Sufficient Revenue Growth

Kentucky's system of revenue should provide adequate resources to finance the services and investments that are deemed essential to a high quality of life. There are three aspects to adequately financing government: 1) revenues must finance the appropriate size of government based on the tastes and values of the citizens; 2) the structure must allow for acceptable funding across the business cycle; and 3) the revenue structure must allow financing to grow with the needs of the state so that the appropriate size government can be maintained over the long term.

Revenue or spending adequacy is a value-laden consideration that must be determined by policymakers and their constituents. There is no “right answer” that lends itself to a technical determination.²⁰ However, an appropriate pattern of revenue growth is the result of carefully crafted tax policy. Determining the correct size of government and then creating a revenue structure to change at approximately the same rate as the state's personal income—without the need to increase rates—should undergird this policy. This permits the desired size of government to be maintained in the future and allows state government tax financing to remain at a fixed percentage of the state's economy. Then, tax rates can be decreased whenever an explicit decision is made to reduce the size of government and increased only when an explicit decision is made to increase the size of government.²¹ However, even the best designed tax policy will not produce revenues that will grow as fast as the economy in every year. It is nearly impossible to design a recession proof tax structure because nearly all taxes are ultimately levied on economic activity that is slowing in a recession. In recession years revenues can be expected to rise more slowly than income, but this should be offset by better revenue growth in expansion years, resulting in a system with the appropriate growth path over the long term. A rainy day fund can be used to smooth out the pattern of expenditures over the business cycle.

²⁰ Figures on expenditure comparisons and trends are found in the appendix.

²¹ The only other time a major tax change should be needed is if a major structural change occurs in the tax system.

Adequate revenue growth is achieved by adopting the proper balance of revenue instruments. The more rapidly growing personal income tax must be balanced with the more moderately growing sales tax and the slow growing selective sales taxes to achieve the intended growth relationship with the economy. The required balance will depend on specific characteristics of the tax structure. For example, income taxes will generally grow faster relative to the economy when the structure is more progressive and sales taxes will grow more rapidly when broader taxation of services is adopted. Also, the balance of tax sources will need to vary with a state's economic structure—there is no single tax system that fits all states.

3.3 Recent Trends in State Tax Revenue

In the next section, we discuss, in detail, the relationship between growth in tax revenue and growth in the economy, the *elasticity* of the tax base—especially the two largest sources of tax revenue for Kentucky, the individual income tax and general sales tax. Here we provide a brief overlook of revenue growth for the past four to five years for Kentucky, its competitor states, and the average of state governments in the United States.

Table 3.1 summarizes annual changes, in percentage terms, for Kentucky, the average of all states (United States), the weighted- average²² of all competitor states as well as each of the competitor states from fiscal year 2006 to 2011. Also reported is the change in revenue from 2007 to 2011. These revenue changes are nominal dollars, not adjusted for inflation. They are also not adjusted for changes in tax rates and policies, though the table notes any changes in the two major sources of tax revenue for state governments, the personal income tax and the sales tax.

Table 3.1: Annual Changes State Tax Revenue¹

State	% Change in State Tax Revenue					
	'07 – '11	'06 – '07	'07-'08	'08-'09	'09-'10	'10-'11
Kentucky	3.1	1.9	1.5	-3.0	-2.1	7.0
United States	0.0	5.8	2.9	-8.4	-1.7	7.9
Competitor States	-3.2	6.2	0.9	-8.0	-2.9	7.3
Alabama	-2.6	4.0	2.3	-8.4	1.1	2.8
Georgia	-12.3	7.2	-1.0	-11.0	-8.1	8.3
Illinois ³	-2.1	7.2	-0.5	-8.4	-6.9	15.3
Indiana ²	5.0	4.2	6.5	-1.4	-7.4	8.1
Mississippi	3.6	8.2	4.1	-3.8	-3.4	7.1
Missouri	-5.6	5.2	2.0	-5.9	-5.6	4.2
North Carolina ²	-0.9	9.8	0.9	-10.0	4.8	4.1
Ohio ³	-2.0	1.1	1.5	-8.3	-1.4	6.8
South Carolina ^{2,3}	-11.5	12.0	-2.9	-9.5	-4.2	5.1
Tennessee	-4.7	6.8	1.3	-9.6	0.8	3.3
Virginia	-6.7	8.0	-1.8	-9.4	-1.2	6.1
West Virginia	10.8	2.1	5.2	-1.9	-0.3	7.8

¹Nominal dollars not adjusted for inflation. Source: Survey of Government Finances, U.S. Bureau of Census.

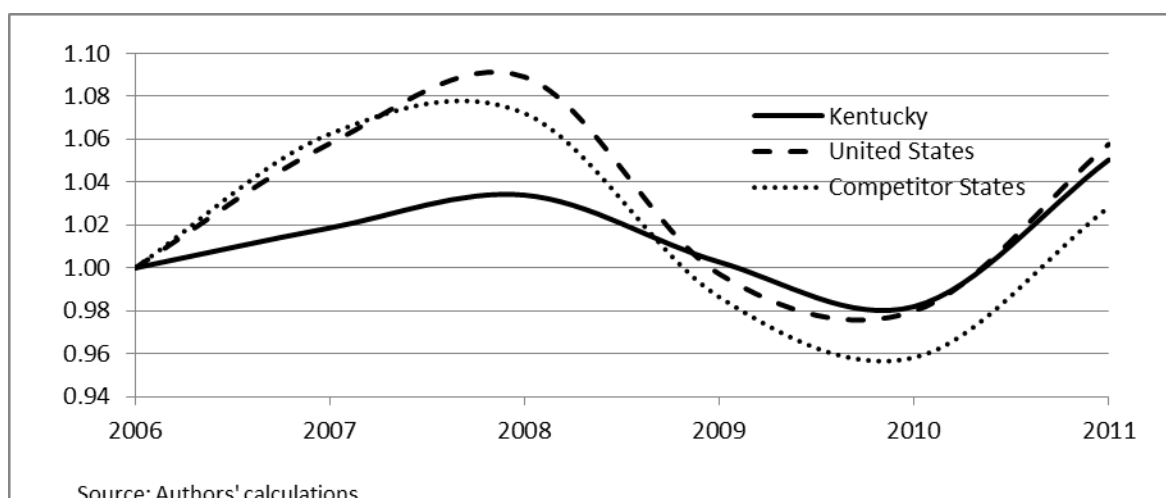
²These states changes sales tax rates during the period 2006 – 2012.

³These states made significant modifications to their personal income tax during the period 2006 – 2012.

²²Again, the weight in this average is state tax revenue.

As can be seen from *Table 3.1*, Kentucky has had much less variance in its tax revenue than many of its competitor states. This can be seen more clearly in *Figure 3.2* which compares state tax revenue in 2007 to 2011 relative to 2006. While the peak of revenue in 2008 was much less pronounced for Kentucky with approximately a 3.5% increase relative to 2006 than its competitors (8 %) and the U.S. average (9 %), it only saw a 2 % reduction in 2010 relative to 2006. In contrast, revenues fell by over 4% for its competitor states and slightly over 2% on average for the U.S.

Figure 3.2: Growth in State Tax Revenue, 2006-2011



3.4 Kentucky's Revenue Elasticity

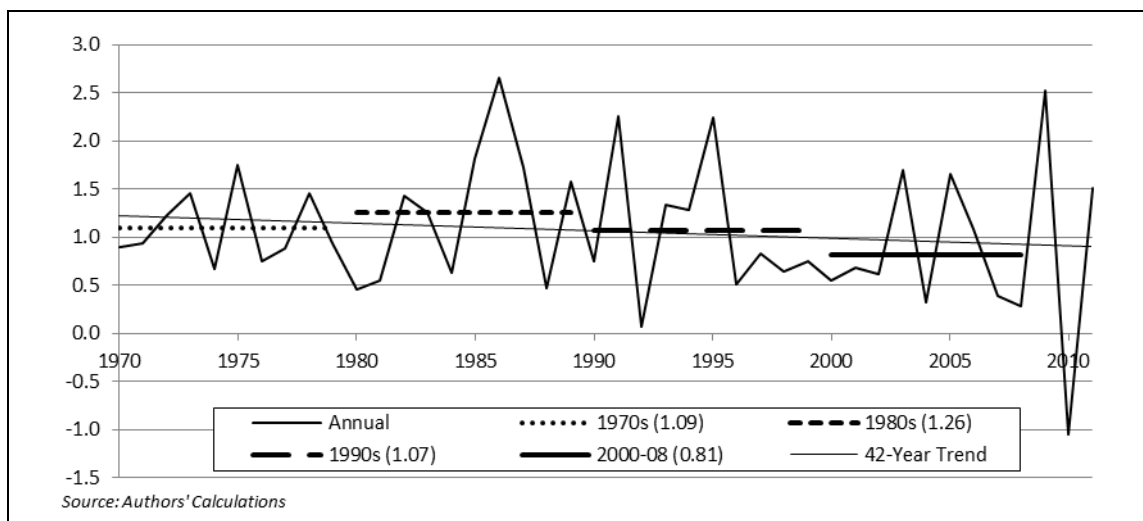
Kentucky's recurring budgetary problems are due, in part, to the long-term decline in revenue elasticity—a measure of whether revenue is keeping pace with the economy.²³ There are several economic, demographic, and political factors contributing to the gradual reduction in elasticity. A multitude of systemic factors affect these sources of revenue, including the gradual shift in personal income away from taxable sources (e.g., wages, salaries, and proprietors' income) and toward mostly nontaxable sources (e.g., some transfer payments and nontaxable employee benefits); the transition from a goods-producing economy that is taxed to a service-providing economy that is largely untaxed; the rise of "mail order" or remote retail sales, which includes Internet and catalog purchases; an aging population whose spending patterns generate less revenue compared to younger cohorts; and the prevalence of tax exemptions. Given the systemic nature of these changes, the long-term decline in revenue elasticity will likely continue in the absence of tax reform.

Here, we do not assess whether government spending is too high or too low, or if the size of government is too big or too small. If policymakers desire government spending to remain approximately proportional to the size of the economy, then revenue elasticity determines whether sufficient revenue is available to do so without frequent increases in tax rates. This analysis illustrates the long-term decline of Kentucky's revenue elasticity and compares it to other states.

²³ Revenue elasticity is calculated as the percent change in revenues divided by the percent change in personal income. An elasticity of 1.0 indicates that revenue is growing at the same rate as the economy, an elasticity of less than 1.0 means revenues grow more slowly than the economy, and an elasticity of greater than 1.0 means revenues grow more rapidly than the economy.

While year-to-year volatility is typical, over the long term revenue should change at approximately the same rate as the economy if the demand for government services and activities is more or less proportional to personal income. An elasticity of 1.0 indicates that revenue growth is keeping pace with economic growth, while an elasticity of less than 1.0 shows revenue is growing slower than the economy. The average elasticity in the 1970s, 1980s, and 1990s are 1.09, 1.26, and 1.07 respectively, but revenue elasticity declines to 0.81 from 2000 to 2008 (see Figure 3.3). The 42-year trend illustrates the downward slope of elasticity.

Figure 3.3: Kentucky's Revenue Elasticity, 1970 to 2011



The same general pattern holds true for the state's two largest sources of tax revenue, the sales and income taxes. As shown in Table 3.2 there has been a general reduction in revenue elasticity since 2000 in the individual income and general sales tax.

Table 3.2: Kentucky Revenue Elasticity

Period	Total Tax Revenue	Individual Income Tax Revenue	General Sales Tax Revenue
1970 - 1979	1.09	1.39	0.84
1980 - 1989	1.26	1.56	1.05
1990 - 1999	1.07	1.63	1.00
2000 - 2008	0.81	0.82	0.87

Source: Authors' calculations.

Note: The total tax revenue and general sales tax revenue were adjusted for the sales tax increase from 5 to 6 percent that occurred in 1991.

Finally, it is also worth noting that a more elastic revenue system means that with downturns in the economy contractions in revenue are larger. Thus elasticity and stability may, at times, be two conflicting goals for a revenue system.

3.5 Comparing Kentucky to Competitor States

Revenue growth rates are affected by both changes in the revenue base and tax rates. Many states' revenue systems have failed to keep pace with overall economic growth during the past decade due to one or both of these factors. Using the ratio between the compound annual growth rates (CAGR) of revenue and personal income, we compare Kentucky to competitor states during three time periods—1980 to 1989, 1990 to 1999, and 2000 to 2008.²⁴ Just like revenue elasticity, a ratio of 1.0 indicates that the revenue is growing at the same rate as the economy. Below we examine total taxes, the individual income tax, and the general sales tax.

3.5.1 Total Taxes

In Kentucky as well as in many of the competitor states the growth in total tax revenue has slowed relative to the economy in recent years. As shown in Table 3.3, the ratio between Kentucky's total tax CAGR and personal income CAGR declined to 0.81 during the most recent period (2000-2008). By comparison, this ratio was 1.1 and 1.02 in the earlier periods. The ratio also declined for the competitor state average—from 1.02 to 0.86. During the 2000-08 period, four of the competitor states—Georgia, Missouri, South Carolina, and Virginia—have ratios lower than Kentucky's, while the remaining 12 competitor states have ratios higher than Kentucky's.

Table 3.3: Compound Annual Growth Rates (CAGR), Personal Income and Total Tax Revenue, Kentucky and Competitor States, Various Time Periods

	1980 - 1989			1990 - 1999			2000 - 2008		
	Total Tax	Personal Income	Ratio	Total Tax	Personal Income	Ratio	Total Tax	Personal Income	Ratio
Kentucky	7.4%	6.7%	1.10	5.7%	5.6%	1.02	3.4%	4.2%	0.81
Competitor States	7.8%	7.6%	1.02	5.7%	5.8%	0.98	3.8%	4.5%	0.86
Alabama	7.8%	7.7%	1.02	5.2%	5.4%	0.96	4.4%	5.2%	0.85
Georgia	9.6%	9.8%	0.98	6.5%	7.3%	0.89	3.7%	4.8%	0.78
Illinois	5.0%	6.7%	0.75	5.0%	5.3%	0.95	3.5%	4.0%	0.87
Indiana	8.0%	6.7%	1.19	5.3%	5.5%	0.98	3.8%	3.7%	1.02
Missouri	8.1%	7.3%	1.11	6.3%	5.5%	1.15	3.1%	4.6%	0.67
Mississippi	5.9%	6.9%	0.86	6.6%	6.2%	1.06	4.6%	5.1%	0.90
North Carolina	9.7%	9.4%	1.03	6.3%	6.9%	0.91	4.9%	5.0%	0.98
Ohio	8.7%	6.5%	1.34	5.3%	4.8%	1.10	3.2%	3.2%	1.01
South Carolina	8.3%	8.8%	0.95	5.1%	6.0%	0.85	2.7%	5.0%	0.55
Tennessee	7.6%	8.1%	0.94	5.5%	6.5%	0.84	4.0%	4.7%	0.85
Virginia	9.9%	9.2%	1.08	6.4%	5.7%	1.13	4.4%	5.7%	0.78
West Virginia	3.2%	4.9%	0.66	4.5%	4.4%	1.01	4.8%	4.6%	1.05
Source: Authors' calculations									
Note: CAGR was calculated on current dollars. Adjustments were made to reflect changes in the sales tax rates.									

3.5.2 Individual Income Tax

As shown in Table 3.4, the ratio between Kentucky's individual income tax CAGR and personal income CAGR declined significantly in the most recent period (2000-2008) compared to earlier

²⁴ We do not include the years during the most recent recession (2009-2011) since the income and revenue trends evidence

periods. And while this ratio also declined for the competitor states too—from 1.53 to 0.94—it is much closer to 1.0 compared to Kentucky’s (0.77). There is only one state in the most recent time period with a ratio lower than Kentucky’s, Ohio with a ratio of 0.71.

Table 3.4: Compound Annual Growth Rates (CAGR), Personal Income and Individual Income Tax Revenue, Kentucky and Competitor States, Various Time Periods

	1980 - 1989			1990 – 1999			2000 - 2008		
	Individual Income Tax	Personal Income	Ratio	Individual Income Tax	Personal Income	Ratio	Individual Income Tax	Personal Income	Ratio
Kentucky	9.1%	6.7%	1.36	8.5%	5.6%	1.53	3.2%	4.2%	0.77
Competitor States	11.6%	7.6%	1.53	7.0%	5.8%	1.22	4.2%	4.5%	0.94
Alabama	11.6%	7.7%	1.50	6.1%	5.4%	1.12	5.1%	5.2%	0.98
Georgia	13.5%	9.8%	1.38	7.9%	7.3%	1.09	4.2%	4.8%	0.88
Illinois	7.1%	6.7%	1.06	6.0%	5.3%	1.14	3.8%	4.0%	0.96
Indiana	14.9%	6.7%	2.23	6.6%	5.5%	1.20	3.2%	3.7%	0.86
Missouri	12.1%	7.3%	1.66	8.2%	5.5%	1.49	4.7%	4.6%	1.02
Mississippi	11.5%	6.9%	1.67	9.6%	6.2%	1.55	5.6%	5.1%	1.09
North Carolina	11.0%	9.4%	1.18	7.7%	6.9%	1.11	5.4%	5.0%	1.09
Ohio	15.5%	6.5%	2.37	6.4%	4.8%	1.32	2.3%	3.2%	0.71
South Carolina	10.8%	8.8%	1.24	5.8%	6.0%	0.97	3.9%	5.0%	0.78
Tennessee	13.4%	8.1%	1.65	5.0%	6.5%	0.77	6.2%	4.7%	1.32
Virginia	12.2%	9.2%	1.32	7.9%	5.7%	1.39	5.0%	5.7%	0.88
West Virginia	7.1%	4.9%	1.45	6.6%	4.4%	1.50	5.8%	4.6%	1.26

Source: Authors’ calculations
Note: CAGR was calculated on current dollars and no adjustments were made to the individual tax revenue.

3.5.3 General Sales Tax

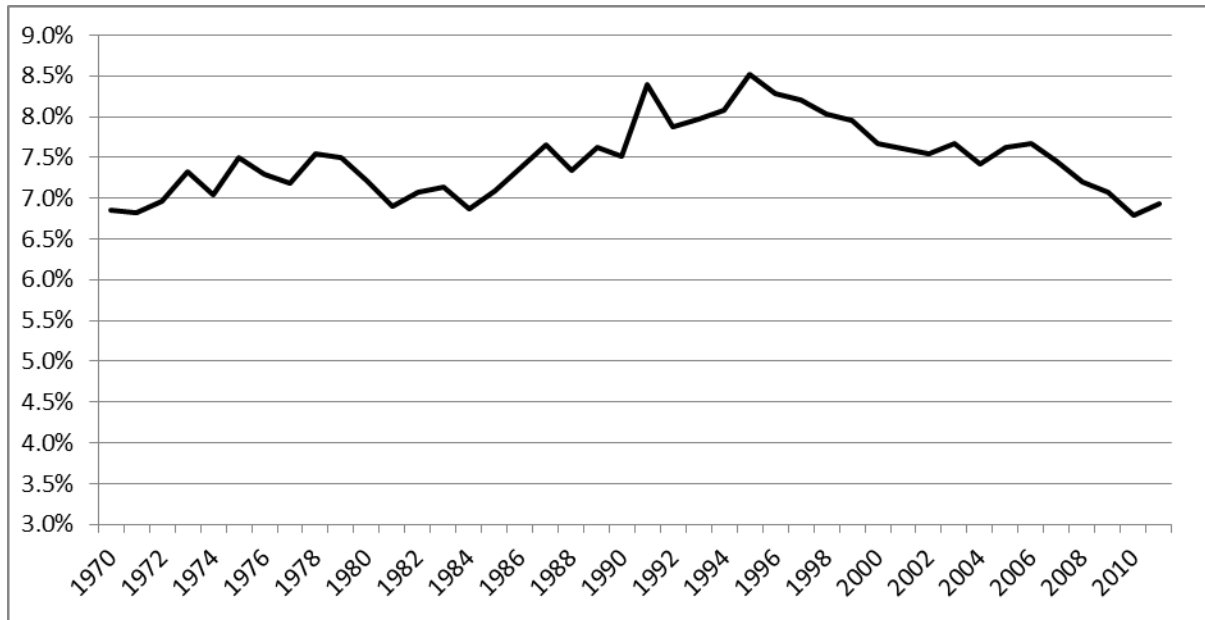
The ratio between Kentucky’s general sales tax CAGR and personal income CAGR declined slightly from the earlier period to the most recent period, with a similar pattern evidenced by the competitor state average. North Carolina is the only competitor state with a ratio in the most recent time period (2000-2008) closer to 1.0 than Kentucky—0.95 compared to Kentucky’s 0.85 and the competitor state average of 0.61.

Regardless of whether we assess the adequacy of the revenue structure by comparing average elasticity or the CAGR ratio, Kentucky’s main revenue sources are growing slower than its economy. While the average elasticity in the earlier periods has been about 1.0, it has slowed to 0.81 from 2000 to 2008. This point is also illustrated by examining Kentucky’s total tax collections as a percentage of personal income (see Figure 3.4), which has declined steadily from its peak of 8.52% in 1995 to 6.94% in 2011. A continuation of this trend could seriously hinder Kentucky’s ability to deliver quality education, health, and other public services.

TABLE 3.5: Compound Annual Growth Rates (CAGR), Personal Income and General Sales Tax Revenue, Kentucky and Competitor States, Various Time Periods

	1980 - 1989			1990 - 1999			2000 - 2008		
	General Sales	Personal Income	Ratio	General Sales	Personal Income	Ratio	General Sales	Personal Income	Ratio
Kentucky	6.2%	6.7%	0.92	5.3%	5.6%	0.96	3.6%	4.2%	0.85
Competitor States	5.7%	7.6%	0.74	4.5%	5.8%	0.79	2.7%	4.5%	0.61
Alabama	6.1%	7.7%	0.79	5.3%	5.4%	0.97	3.8%	5.2%	0.73
Georgia	8.4%	9.8%	0.85	5.7%	7.3%	0.78	2.8%	4.8%	0.60
Illinois	3.1%	6.7%	0.46	1.7%	5.3%	0.33	2.7%	4.0%	0.69
Indiana	5.0%	6.7%	0.75	2.9%	5.5%	0.54	2.2%	3.7%	0.58
Missouri	5.7%	7.3%	0.78	4.1%	5.5%	0.74	1.9%	4.6%	0.41
Mississippi	2.9%	6.9%	0.42	6.5%	6.2%	1.04	3.8%	5.1%	0.74
North Carolina	10.5%	9.4%	1.12	3.9%	6.9%	0.57	4.7%	5.0%	0.95
Ohio	7.4%	6.5%	1.13	5.6%	4.8%	1.17	1.7%	3.2%	0.52
South Carolina	7.2%	8.8%	0.82	5.5%	6.0%	0.92	0.4%	5.0%	0.08
Tennessee	7.2%	8.1%	0.88	5.7%	6.5%	0.88	3.5%	4.7%	0.75
Virginia	7.1%	9.2%	0.77	6.5%	5.7%	1.16	3.0%	5.7%	0.52
West Virginia	-7.8%	4.9%	-1.58	1.8%	4.4%	0.41	2.4%	4.6%	0.52
Source: Authors' calculations									
Note: CAGR was calculated on current dollars and adjustments were made to reflect changes in the sales tax rates.									

Figure 3.4: Kentucky Total Tax Collections as a Percentage of Personal Income, 1970-2011



3.6 Simulation of Future Revenue Performance

We simulate Kentucky revenue to 2020 using two different assumptions. In the first scenario we assume that tax revenues will grow at the same rate as the economy—which was the case, more or less, in the 1970s, 1980s, and 1990s. Then, in the second scenario we assume that revenue will grow at the same elasticity that occurred from 2000 to 2008. The second scenario is more likely since the trends, factors, and forces that have been reducing revenue elasticity are still in place and are

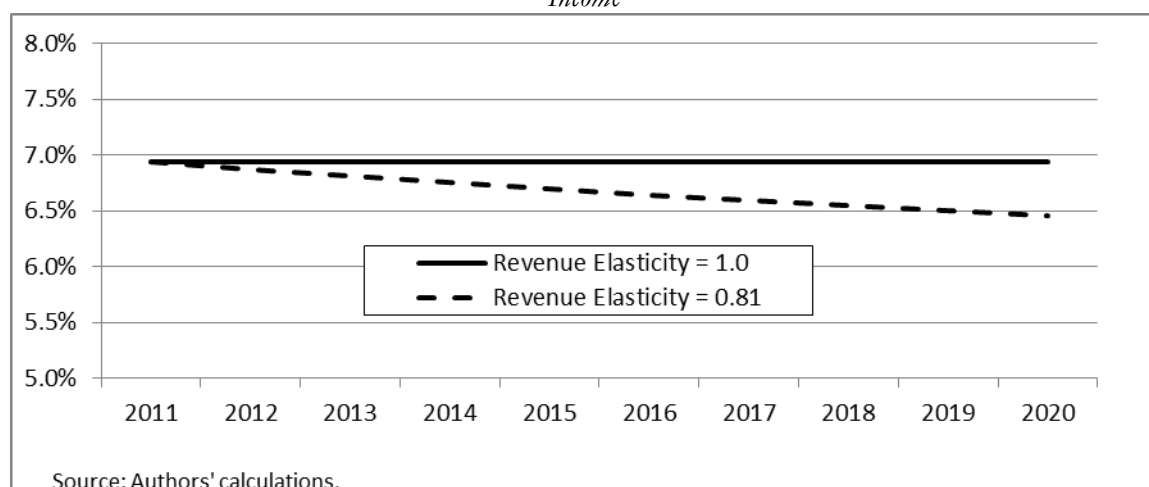
expected to remain for the foreseeable future. In both scenarios we assume that Kentucky's economy will grow at the compound annual rate of 4.2 percent, which is the rate experienced from 2000 to 2008.

Total tax revenue grows in both scenarios—as does Kentucky's economy—but the size of state government, as well as its ability to deliver services, is markedly lower in the second scenario given the expected annual shortfalls (see Table 3.6). Tax revenue remains at about 6.9 percent of the economy in the first scenario but declines to below 6.5 percent in the second scenario (Figure 3.3). As we indicated earlier, this represents a size of state government that has not been seen since 1968. If revenue elasticity is not improved, then tax revenue would be more than a \$1 billion short of expected demand for public services by 2020, resulting in a significant reduction in the size of government. Addressing this structural deficit by improving revenue elasticity is necessary for the long-term finance of Kentucky state government services and investments. In the sections that follow we present options that will improve the elasticity of Kentucky's tax structure.

Table 3.6: Kentucky Revenue Simulation

	Revenue (Elasticity = 1.0) (\$millions)	Revenue (Elasticity = 0.81) (\$millions)	Shortfall (\$millions)
2013	\$ 11,265	\$ 11,059	(\$ 206)
2014	\$ 11,796	\$ 11,481	(\$ 314)
2015	\$ 12,327	\$ 11,900	(\$ 427)
2016	\$ 12,858	\$ 12,315	(\$ 543)
2017	\$ 13,389	\$ 12,727	(\$ 662)
2018	\$ 13,919	\$ 13,136	(\$ 784)
2019	\$ 14,450	\$ 13,541	(\$ 909)
2020	\$ 14,981	\$ 13,944	(\$ 1,037)
Source: Authors' calculations.			

Figure 3.5: Simulated Kentucky Tax Revenues as a Percentage of Personal Income



4. Fairness and the Distribution of Tax Burden

4.1 Principles of Fairness

The notion of a tax system being “fair” or “unfair” is clearly a subjective notion and therefore not a topic in which we or any other economists have any expertise. Thus, rather, than evaluating whether or not the Kentucky tax system is fair or not fair, our objective here is to provide some information about the distributional impact of Kentucky’s tax system -- that is, who appears to be bearing the burden of Kentucky’s taxes.

Rather than attempting to discuss the distribution of the tax burden for the system as a whole, as has been done by a number of studies, we focus on the distribution of the burden for individual taxes instruments. We do this for two reasons: 1) the studies that attempt to examine the burden of the entire system often have to make rather heroic assumptions about the incidence of taxes; and 2) as the policy recommendations that we make are about options for specific tax instruments, we believe it is more useful to have an understanding of the distributional impact of those taxes might be.

Before discussing the distribution impacts of Kentucky’s current tax structure it will be useful to discuss a few considerations when discussing the fairness and distribution of taxes.

4.1.1 *Vertical Equity*

The notion of *vertical equity* can best be summarized as justice or fairness of different individuals or households in different economic circumstances. In practice, vertical equity is most often focused on the relative tax burden of households having different incomes. However, there are other senses in which households are in different economic circumstances and many may view it as fair to treat them differently. Obvious examples are exemptions based on the number of dependents or treatment of different sources of incomes, for example, pensions or capital gains, differently.

Tax systems in which households with lower incomes pay a greater share of their income in taxes are referred as *regressive*; when taxes as a share of income are higher in households with greater incomes that tax is considered *progressive*. Finally, if taxes as a share of income are the same for households of low and high incomes, the system is *proportional*.

4.1.2 *Horizontal Equity*

Less attention has probably been paid by policymakers to notion of *horizontal equity*, fairness in the treatment of individuals or households in similar economic circumstances. At one extreme, horizontal equity might be considered having households with the same income paying the same in taxes.

If this is the notion of equal economic circumstances, current tax policies, for all states and all levels of government, violate this notion. For income taxes the source of income broadly defined -- earnings, pensions, health insurance, capital gains, social security, and in-kind transfers are clearly treated differently resulting in differences in tax payments. Then, too, deductions and exemptions result in different taxes for households with the same incomes. Thus, for example, two households with the same incomes but one that owns their house and has a mortgage and the other that rents

have potentially very different income tax burdens. These two households have made different consumption choices but are their economic circumstances different?

Taxes on consumption, a general sales tax and excise taxes on specific goods, for example, mean that consumption choices rather than what we might consider economic circumstances such as income. Differences in tax burden from sales taxes are likely to be more pronounced the narrower the tax base and the higher the rate on the base. A very broad base, including tangible goods and services, for example, with a lower tax rate, is likely to result in smaller differences in tax burden for households of similar incomes.

4.1.3 Incidence

Critical to understanding the fairness of a tax is determining who really pays the tax. Economists make the distinction between *statutory incidence*, from whom the tax is collected, and the *economic incidence*, who actually pays the tax. Thus, for example, the statutory incidence of a tax on retail gasoline purchase is with the station selling the gasoline but if the price of gasoline inclusive of the tax is higher to the consumer purchasing the gasoline then at least part of the economic incidence is borne by the consumer.

Economic research suggests that the burden of the sales and excise taxes is borne by consumers – that is, the final price of goods that includes taxes increase by the amount of the taxes.²⁵ The evidence on the impact of taxes on earnings, such as payroll taxes, suggests that the burden is borne by the employee.²⁶ Higher taxes on earnings results in lower earnings. Thus the notion that an employer pays half of OASDI (Social Security) and Medicare taxes is not, in terms of economic incidence, accurate as this increase in tax burden on employer is likely to result in lower wages or growth in wages. It should, however, be noted that for imposition of state and local taxes on earnings, economic research suggests that the burden is not fully borne by employees.

Perhaps one of the most important implications of the distinction between statutory and economic incidence applies to taxation of businesses. Businesses do not bear any of the burden of taxation, taxes imposed on businesses are ultimately borne by the consumers of the goods and services they produce, their employees, or the owners and investors in the business. However, while it is tempting to think that the incidence of taxes imposed on businesses located in Kentucky but selling their goods and services elsewhere will be borne by their consumers elsewhere, this is likely not to be the case. If the business is in a competitive industry, with its competitors located in other states and nations, differences in Kentucky taxes are likely to be borne in Kentucky as lower earnings to employees and rents.

²⁵ See Timothy Besley and Harvey S. Rosen. "Sales Taxes and Prices: An Empirical Analysis," *National Tax Journal* (1999) and J. Poterba. "Lifetime Incidence and the Distributional Burden of Excise Taxes," *American Economic Review* (1989) for studies of the incidence of state sales taxes. Both studies find that the burden of a general sales tax is borne almost entirely by final consumers of the taxed goods.

²⁶ See Sally Wallace "The Effects of State Personal Income Tax Differentials on Wages," *Regional Science and Urban Economics*, (1993). Wallace examines the extent to which the incidence of state income taxes are fully borne by the employee in eight sectors of the economy. She finds that labor does not bear the full burden of the income tax in 25% of the occupation/industry groups she examines.

4.2 *Limits of Redistribution and the Level of Government*

The effectiveness of redistribution, either through the tax code or through transfer programs, depends on both the responses of the recipients of the assistance and the taxpayers financing the programs. For state and local governments attempting to engage in redistribution through the tax code or transfer programs, the responses of greatest concern are the mobility of taxpayers and recipients of aid. In the economic literature, there has been a great deal of research examining how differences among states in welfare programs influence the location of households eligible for this aid. Results of these studies suggest that states with more generous transfer programs may attract recipients from other states. While the mobility of low income households may be of some concern in the design of transfer programs, this is probably less of a concern in designing a tax system.

On the other end, there is evidence that higher income and other taxes influence the locational decisions of households. Coomes and Hoyt (2008)²⁷ examine how differences in state income taxes influence locational decisions of households living in metropolitan areas on state borders (Louisville and Cincinnati as examples) and find that households are more likely to choose to live in the state with the lower taxes everything else equal, though the impact is relatively small.

Because it is much less costly for households and businesses to relocate between states or localities than it is for them to relocate between countries, states and localities have much less ability to redistribute income than the federal government does. Offering aid programs that are much more attractive than neighboring states is likely to induce migration of eligible households into the state increasing the costs of operating the programs. At the other end, high marginal income tax rates make the state less attractive to high income individuals and the firms that employ them. While redistribution by state governments is possible, the federal government, because of the very limited mobility at this level, is going to be much more effective at redistribution.

4.3 *Distributional Impact of Sales Tax*

As discussed in the preceding section, economists believe, with supporting evidence that sales taxes are borne by the consumer not the producer or retailer. Then to understand how the sales tax burden varies with income, we need information about household expenditures for households with different incomes. This is obtained from the Consumer Expenditure Survey (CE), a survey of households undertaken by the United States Bureau of Labor Statistics (BLS).²⁸ Each of the households in the survey completes a detailed diary of their purchases and expenditures during the survey period. Among other summary data the BLS releases from this survey is detailed information of the expenditure patterns by level of income.

This table is the basis for our examination of the burden of the Kentucky state sales tax on households of different income levels. A few points of caution about this analysis are worth bearing in mind. First, as discussed earlier, this analysis is done assuming the incidence of sales tax is entirely borne by the final consumer. Second, this is analysis of *direct* sales taxes to the consumer, that is, sales taxes on final retail transactions of goods and services. In fact, as Ring (1999) has estimated

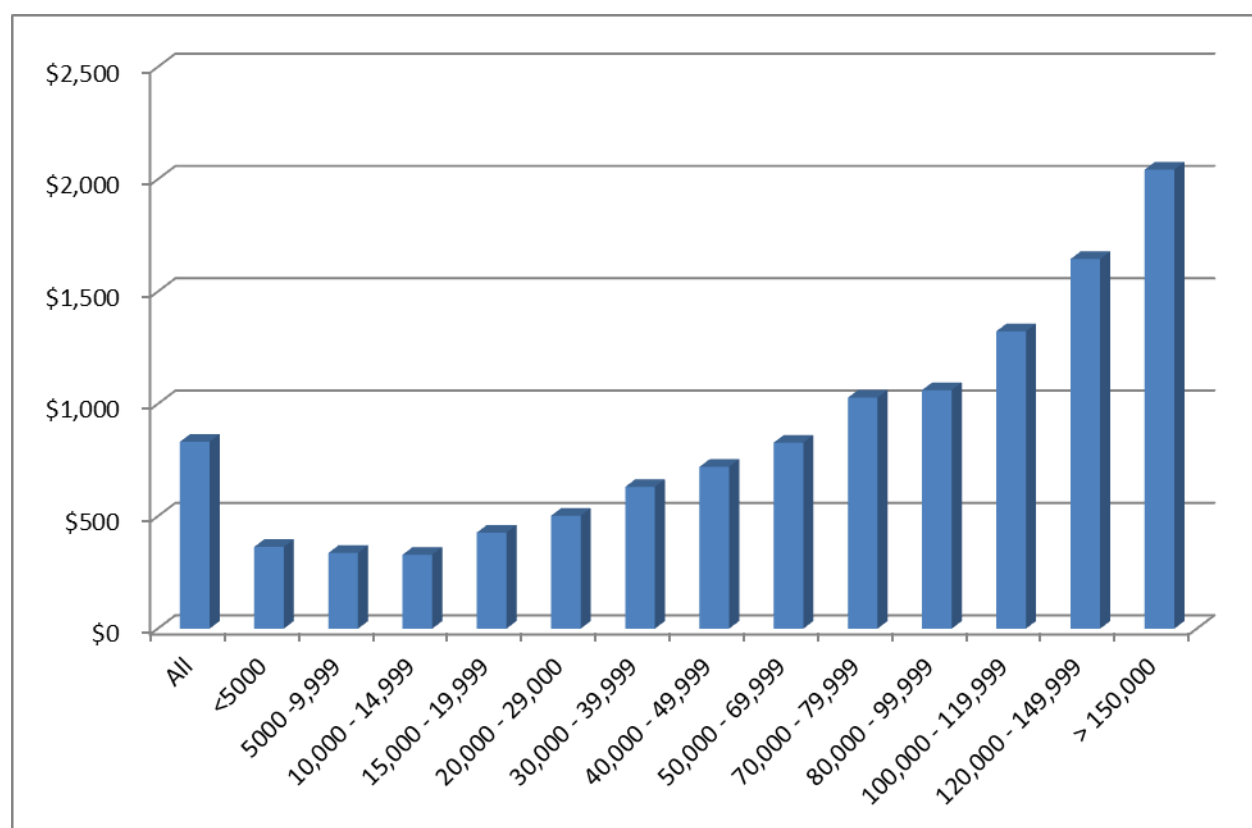
²⁷Pual A. Coomes and William H. Hoyt, "Income taxes and the destination of movers to multistate MSAs, *Journal of Urban Economics* (2008).

²⁸ See the Bureau of Labor Statistics website discussion of the Consumer Expenditure Survey at <http://www.bls.gov/cex/> for more detail on the survey.

and as is clear from Kentucky statutes, a major share of the general sales tax collections are not on final sales but intermediate business-to-business transactions.²⁹ We make no attempt to estimate the final incidence of these *indirect* sales taxes on consumers. Further, these expenditure estimates are based on a sample of households across the entire United States rather than just Kentucky as the BLS will not release that refined of information on geographical location in this survey. While there are obvious differences among states and regions in consumption patterns, it is not obvious that expenditure patterns in Kentucky will vary much from the United States average. Finally, within each income category, these are the average expenditures – individual households with the expenditure category may have very different spending patterns.

Then having information about the expenditure patterns of households in different income ranges enables us to determine what the average sales tax burden of these households are. We do this by matching information about the goods and services subject to the Kentucky sales tax with our information on household expenditures. The sales tax burden, then, is six percent of whatever expenditures are subject to taxation. In *Figure 4.1A* we report the average direct Kentucky general sales tax payments for 2010.

Figure 4.1A: Estimated Direct Kentucky Annual General Sales Tax Burden by Income, Current Code



Source: Authors' calculations using the Consumer Expenditure Survey prepublication tables (courtesy Bureau of Labor Statistics), and information on goods and services subject to the Kentucky general sales tax from <http://www.lrc.ky.gov/kar/TITLE103.HTM> and discussion with Department of Revenue personnel.

²⁹Raymond Ring, Jr. "Consumers' Share and Producers' Share of the General Sales Tax," *National Tax Journal* (1999) estimates that only 54 percent of the general sales tax in Kentucky 1989 was directly paid by consumers.

Perhaps more relevant for discussions of tax distribution is a comparison of the share of income paid in sales taxes for the different levels of income. This can be seen in *Figure 4.1B* where the redline shows the tax paid by the household of average income in the sample.³⁰

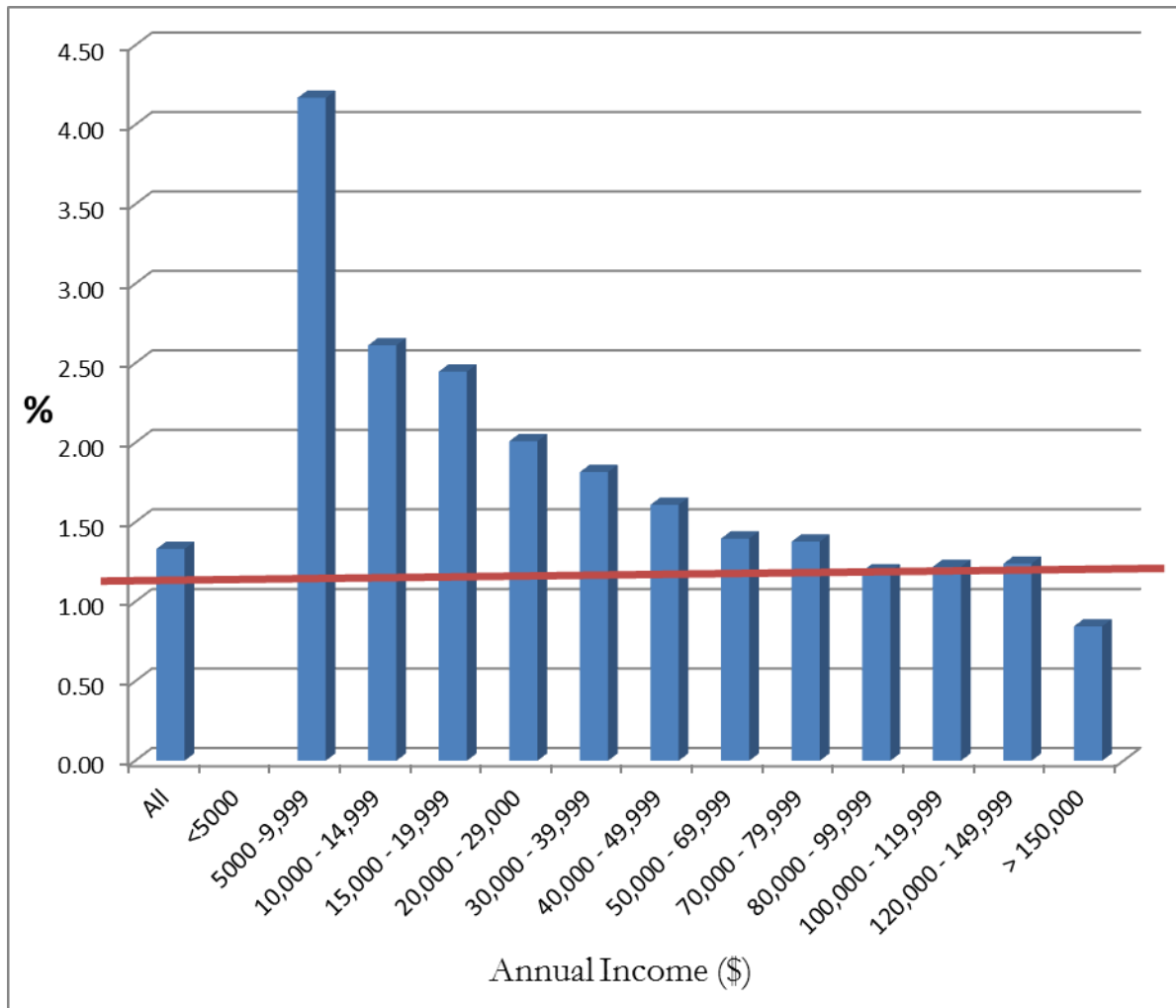
As the figure makes clear, the general sales tax is regressive – households with lower incomes pay, on average, a greater share of their income in direct general sales taxes than households with higher incomes. Why is this? There are two reasons. One is that the current tax base, focused on tangible goods rather than services, might be one that lower income households spend a disproportionate share of their income on. The second is that lower and higher income households differ in how much of their income they spend. While there is some evidence that the first explanation might have some merit, it is only limited as Kentucky does not have a general sales tax on food nor most shelter. There is far more evidence to suggest that the differences in expenditures as a share of income explains much more of the difference. On average, households with annual gross income below \$40,000 have expenditures exceeding income while households with incomes exceeding \$100,000 spend less than 70% of their income on average.

To give some perspective on how differences in the sales tax base affect direct tax burdens and the distribution of taxes, we offer two alternative options. While we discuss these options more later, the first option is to expand the base by adding a number of consumer services primarily household services (cleaning), automotive, and personal care (barber, stylist, health club) to the current general sales tax base. In addition, we impose a three percent tax on utilities (already subject to a local maximum of rate of three percent). The second option adds food purchased for home consumption not already subject to taxation to the current base and the base added in the first option. *Figure 4.2A* shows the estimated tax burden for the different levels of income for the current code and these two additional options and *Figure 4.2B* gives the tax burden as a percentage of income.³¹

³⁰ In *Figure 4.1B* (as well as *Figure 4.2B*) taxes paid as a percentage of income is based on the average income within that income bracket -- this is not the midpoint of the bracket and, in fact, for households with income less than \$5,000, this figure was negative and why nothing is reported. *Table A.4.1* in the Appendix reports the average income for each income bracket.

³¹ Estimated food stamp income was subtracted from food expenditures when making the calculations reported in *Figure 4.3* and *Figure 4.4* as these purchases would not be subject to taxation.

Figure 4.1B: Estimated Direct Annual Sales Tax Burden as Percentage of Income by Income, Current Code

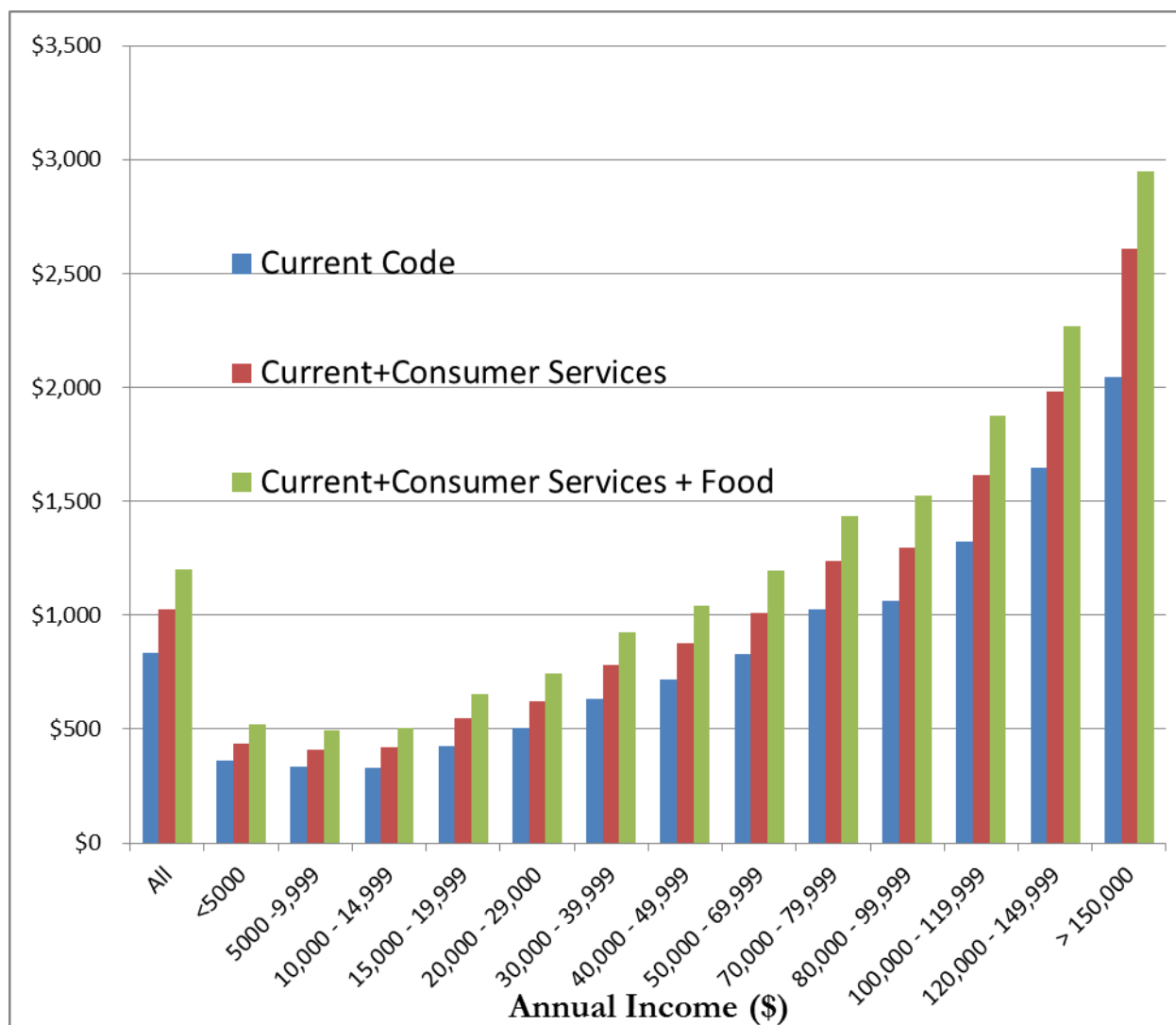


Source: Authors' calculations using the Consumer Expenditure Survey prepublication tables (courtesy Bureau of Labor Statistics), and information on goods and services subject to the Kentucky general sales tax from <http://www.lrc.ky.gov/kar/TITLE103.HTM> and discussion with Department of Revenue personnel.

Of course, the tax burden increases for households of any income as the base is expanded. As the concern here is more related to the distribution of taxes, it is important to keep in mind that if tax revenue is to be kept neutral, for example, a broader base will allow lower rates. Then focusing on the distributional implications we might compare relative burdens across the income categories for the current code and the two alternatives. Under the current code, the tax burden as a share of income, for the household of average income is 1.33% while it is 1.24% for households with incomes in between \$120,000 and \$149,999. The ratio $1.33/1.24$ is equal to 1.07, the tax burden, as a share of income, for the average household is seven percent more. For households with incomes between \$20,000 and \$29,999, their tax burden is estimated at 2.02% of income. This, then, is 62% more as a share of income ($2.02/1.24=1.62$) than the second highest bracket pays as a share of income.

A similar excise can be performed for the alternative tax bases. Adding consumer services and utilities makes the tax burden as share of income for the household of average income equal to 1.64% and for households with incomes between \$120,000 and \$149,999 equal to 1.49%. Then the average household is actually paying 10% more in the general sales tax as a share of income ($1.64/1.49=1.10$). For households with incomes between \$20,000 and \$29,999 the tax burden adding consumer services is 2.48% of income. This, then, is 62% more as a share of income ($2.02/1.24=1.62$) than the second highest bracket pays as a share of income. While this is only a comparison among a few of the income classes, it suggests that the addition of consumer services and utilities might slightly increase regressivity though the effect seems small.

Figure 4.2A: Estimated Direct Annual Sales Tax Burden by Income, Current Code & Alternative Proposals

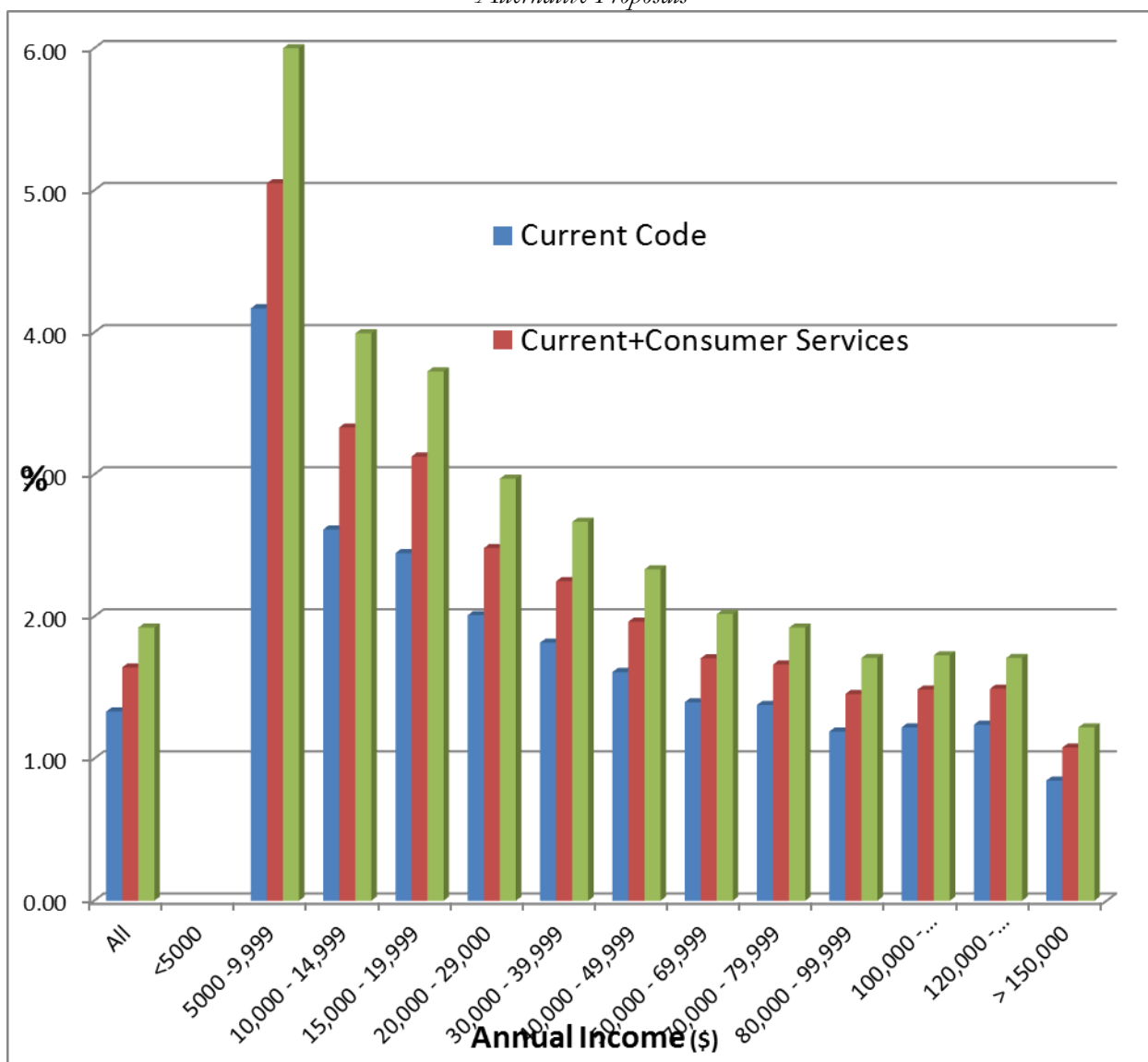


Source: Authors' calculations using the Consumer Expenditure Survey prepublication tables (courtesy Bureau of Labor Statistics), and information on goods and services subject to the Kentucky general sales tax from <http://www.lrc.ky.gov/kar/TITLE103.HTM> and discussion with Department of Revenue personnel.

Finally, not surprisingly, adding at home food expenditures makes the general sales tax more regressive. The tax burden as share of income for the household of average income equal to 1.92% and for households with incomes between \$120,000 and \$149,999 equals 1.71%. Then the average household is actually paying 12% more in the general sales tax as a share of income. For households with incomes between \$20,000 and \$29,999 the tax burden adding consumer services is 2.97% of income. This, then, is 74% more as a share of income than the second highest bracket pays as a share of income.

More detail on these comparisons and calculations on the tax base as a share of expenditures can be found in *Table A.4.1* in the *Appendix*.

Figure 4.2B: Estimated Direct Annual Sales Tax Burden as a Percentage of Income by Income, Current Code & Alternative Proposals



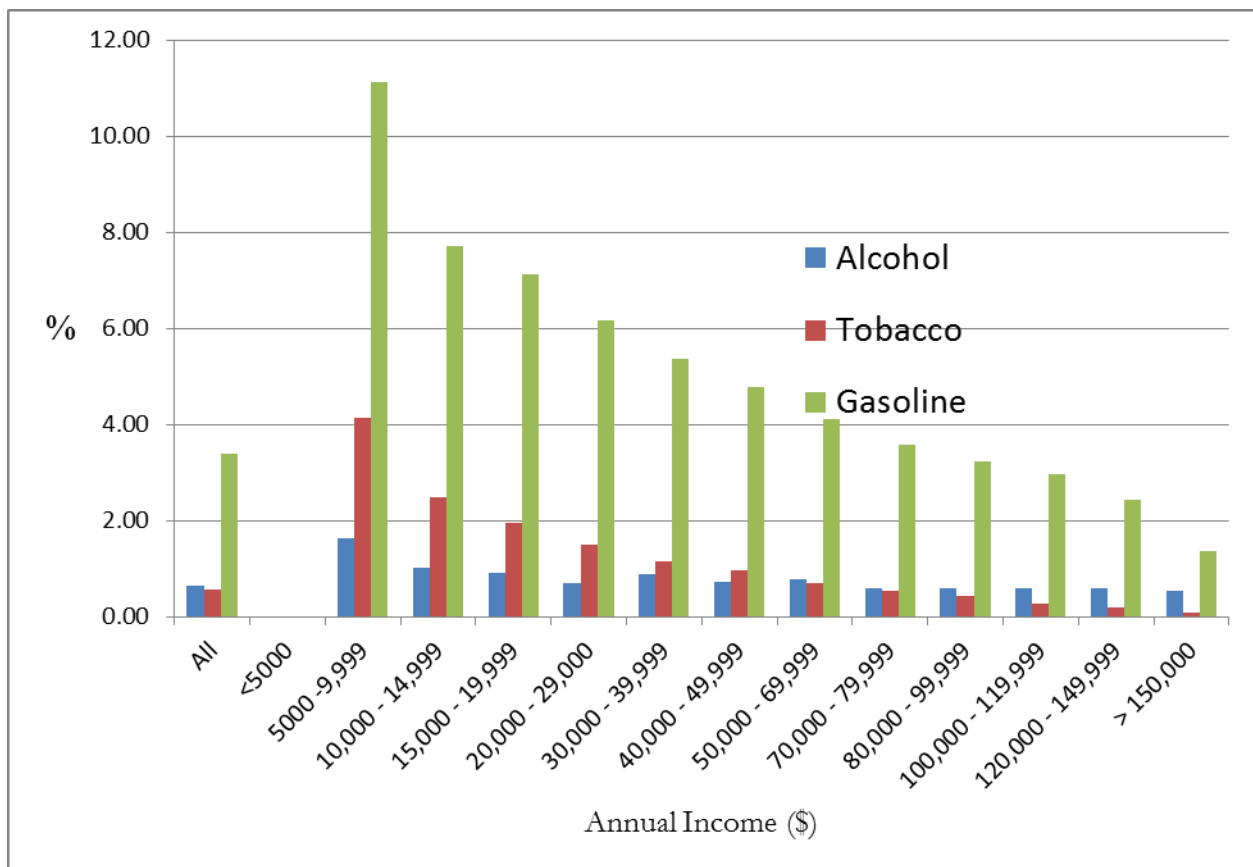
Source: Authors' calculations using the Consumer Expenditure Survey prepublication tables (courtesy Bureau of Labor Statistics), and information on goods and services subject to the Kentucky general sales tax from <http://www.lrc.ky.gov/kar/TITLE103.HTM> and discussion with Department of Revenue personnel.

4.3.1 Distributional Impact of Excise Taxes

A similar exercise can be performed for excise taxes. However, as can be seen from the earlier analysis on the general sales tax given the assumption the tax is fully borne by the consumer, the relative tax burdens, as a share of income, across the income distribution depend entirely on how much is spent on the tax goods as a share of income. Then, for the excise taxes on gasoline, tobacco, and alcohol, we do not report on tax burden as share of income but on household spending on these goods as a share of income. This, using the same sample from the Consumer Expenditure Survey for 2010, is summarized in *Figure 4.3*.

Given the declining share of income spent on tobacco and gasoline, taxes on these goods are likely to be regressive. For alcohol, it is less clear, as very low income households spend a higher share of income on it than higher income households, but there is not a great deal of difference between households in the middle and higher income brackets.

Figure 4.3: Expenditures on Alcohol, Tobacco, and Gasoline as Share of Income, by Level of Income



Source: Authors' calculations using the Consumer Expenditure Survey prepublication tables (courtesy Bureau of Labor Statistics).

4.4 Distributional Impact of Income Tax

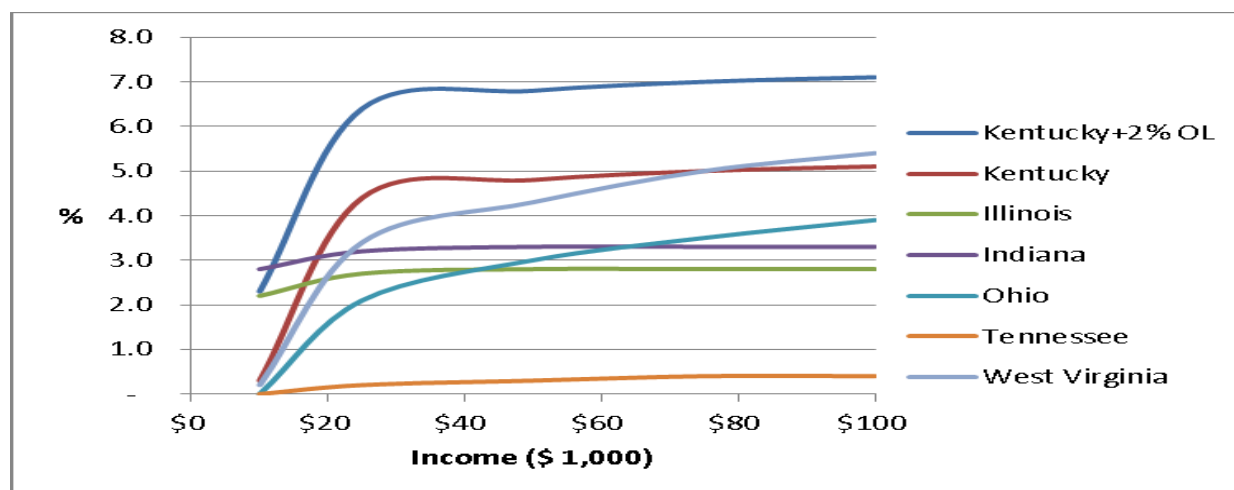
The complicated nature of the income tax can mean that tax burdens can vary substantially among households even with similar income, depending on the type of household, the source of earnings,

and consumption decisions such as owning versus renting a home. To get an indication of the how income tax burdens vary with income and household composition we report the state income taxes for Kentucky and its competitor states for four representative households for five different levels of income.

Figures 4.4A – 4.4D reports the percentage of income (average tax rate) for four different households in Kentucky and its contiguous neighbors excluding Missouri and Virginia because of their limited borders with Kentucky. Also included is the Kentucky average tax rate plus a 2% Occupational License tax as is found, for example, in Louisville and Lexington. In *Figure 4.4A* we show the average tax rate for a single filer, in *Figure 4.4B* rates are presented for joint filers with no dependents, *Figure 4.4C* reports rates for joint files with two dependents, and rates for a single taxpayer over 65 years of age are found in *Figure 4.4D*. In each table, the average tax rate is reported for households with incomes of \$10,000, \$25,000, \$50,000, \$75,000, and \$100,000. These calculations were done by the National Bureau of Economic Research (NBER) and were done by the NBER program TaxSim for 2010.³²

Compared to its competitor states, Kentucky has higher average income tax rates between \$25,000 and \$100,000 with rates ranging from 1% to 2% higher. For households with \$10,000 or less its rates are generally equal to or less than in competitor states. As can be seen in the figures Kentucky tax rates increase dramatically between \$10,000 and \$25,000 for single filers and joint filers with no dependents. For joint filers with dependents and single filers over 65 years of age, taxes are progressive through \$50,000. Note that in *Figure 2C* the average income tax rate in Kentucky's competitor states is actually negative for an income of \$10,000. This is because several competitor states have a state Earned Income Tax Credit (EITC) program for which employed, low income households are eligible³³. *Tables A.4.2A – A.4.2D* in the Kentucky provide more detailed information on state income tax payments, payments as a percent of income, and payments in other states relative to Kentucky.

Figure 4.4A: State Personal Income Taxes for Single Filers as a Percentage of Income (2010)



³²Information on the calculation can be found at <http://users.nber.org/~taxsim/state-tax-tables/>. The NBER has income as 91% wages, 6% dividends, and 3% from taxable interests. Deductions are \$100 + 2% of income for real estate taxes, \$100 + 2% of income for charitable giving, and \$100 + 6% for mortgage interest.

³³Competitor states that have state EITC programs include Illinois, Indiana, and Virginia.

Figure 4.4B: State Personal Income Taxes for Joint Filers with No Dependents as a Percentage of Income (2010)

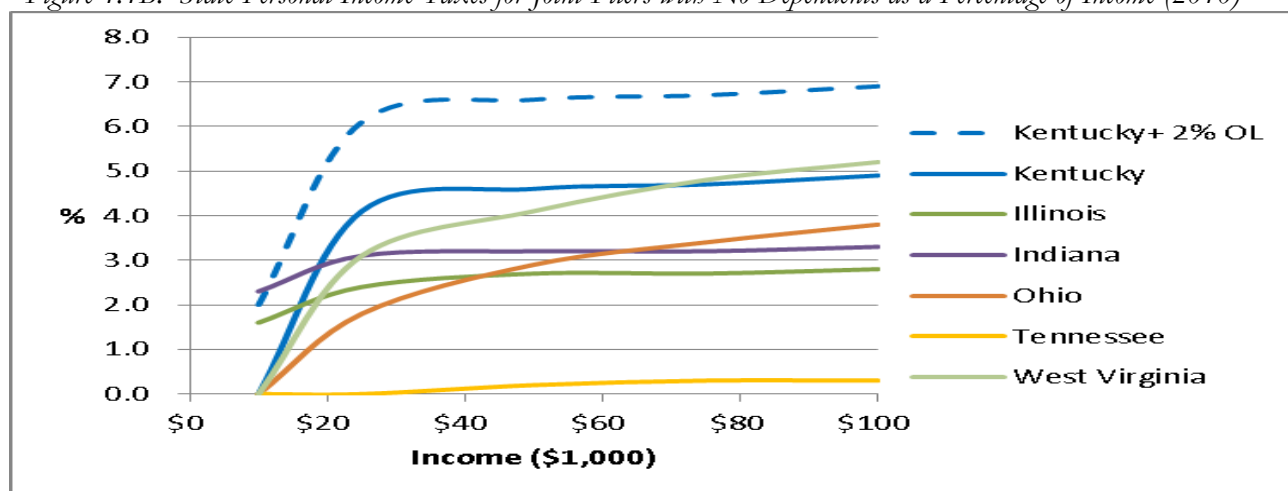


Figure 4.4C: State Personal Income Taxes for Joint Filers with 2 Dependents as a Percentage of Income (2010)

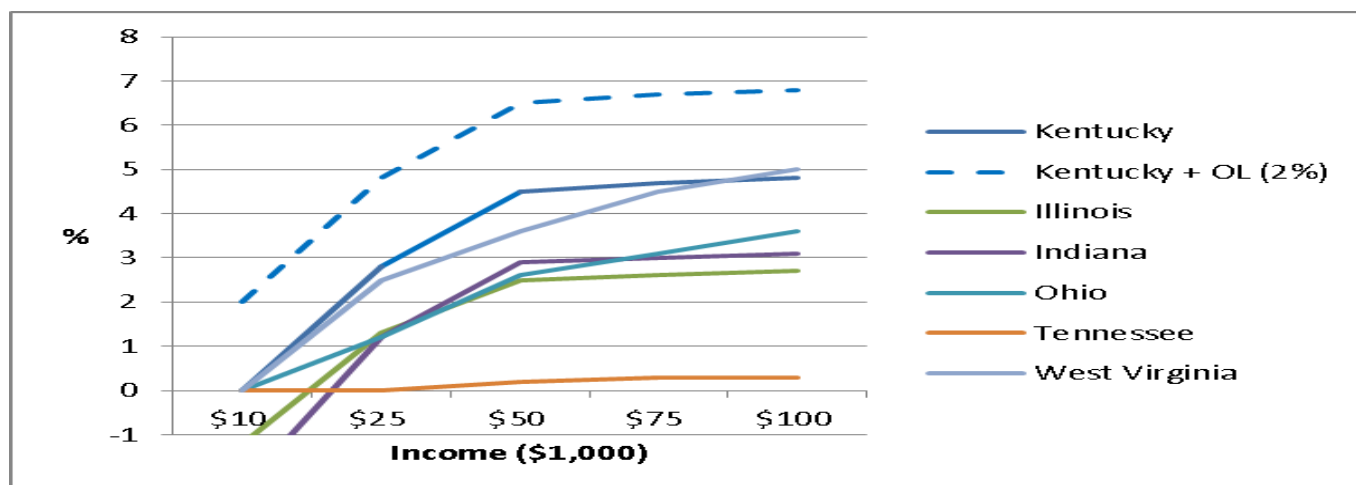
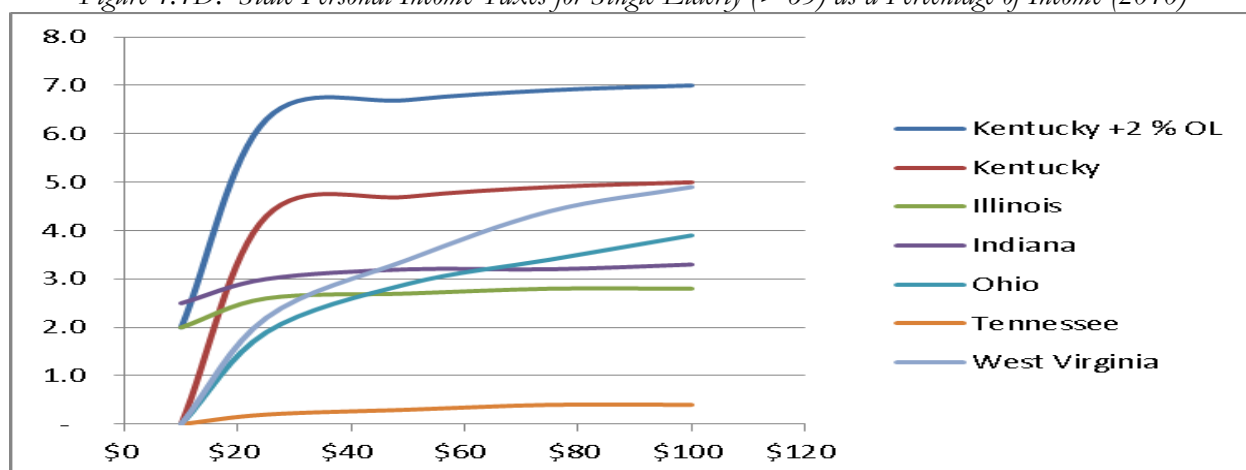


Figure 4.4D: State Personal Income Taxes for Single Elderly (> 65) as a Percentage of Income (2010)



Source: Authors' calculations using simulated taxes from National Bureau of Economic Research (NBER) TaxSim website <http://users.nber.org/~taxsim/state-tax-tables/>.

4.5 *Distributional Impact of Business Taxes*

People pay taxes, not businesses is a basic tenant of economics. Taxes that are initially imposed on business, and the corporate income tax in particular, could be paid by the purchasers of goods and services, suppliers of inputs such as labor or land, or owners of businesses. Disentangling who actually pays the tax is very difficult both conceptually and practically and must be based on careful economic analysis. A number of economists have examined who pays state and local taxes on capital and concluded that a complicated national average is paid by the owners of capital.³⁴ But, since investments in Kentucky can move to avoid the tax, increases or decreases in Kentucky's corporate tax are likely to be borne by immobile factors in the state. Thus, a corporate tax increase (decrease) will result in lower (higher) wages or lower (higher) land prices. Empirical research in a recent paper from the Federal Reserve Bank of Kansas City concluded that higher corporate income taxes result in lower wages in the state.³⁵ Higher corporate taxes are found to have an increasingly negative effect on wages and the impacts are greatest on the best educated workers.

Policy makers should not be surprised that higher taxes on business reduce returns to less mobile factors in the state, and particularly workers. Businesses can respond to high tax rates by shifting some investment and production out of the state. Workers are less productive when they have less capital to work with so their wages go down as a result. Workers could choose to move to another state where earnings are higher, but households are much less inclined to move because of linkages to their homes and communities. A clear outcome of these results is that states can only expect to "export" taxes to other states in rare exceptions, such as when the tax is levied on a very specialized product in which the state has considerable power in the national or international pricing of the good. Otherwise, taxes imposed on business in Kentucky are likely to be borne in lower earnings from Kentucky residents rather than by people from outside the state.

³⁴ See Mieszkowski and Zodrow (1999) for example.

³⁵ Felix, Alison. 2009. "Do State Corporate Income Taxes Reduce Wages?" Kansas City Federal Reserve Bank Review, Second Quarter, pp. 77-102.

5. *The Competitiveness of the Kentucky Tax System*

In this section we have several objectives. We first compare Kentucky to its competitor states in a number of measures of economic growth. Still focusing on comparisons of economics growth, we next provide some comparisons along Kentucky borders as these are areas which, in terms of state policies, are probably the most competitive. Next we review and assess studies examining the relative burden of taxes on Kentucky and competitor states. Finally, we provide a review and discuss the implications of the extensive literature in economics of the impacts of state taxation on employment and firm location.

5.1 *Economic Growth in Kentucky and its Competitor States*

There are many reasons why some regions may have less economic success or grow more slowly than neighboring regions. Certainly, economic evidence suggests that government policies, including taxes, might be one reason but certainly not the only reason. Here, we offer some comparisons between Kentucky and its competitor states in employment, population, earnings, and income. Certainly some of these differences might be attributable to differences in tax policies, but it is unlikely that tax policies alone explain much of the differences among these states. We begin with comparisons of per capita income.

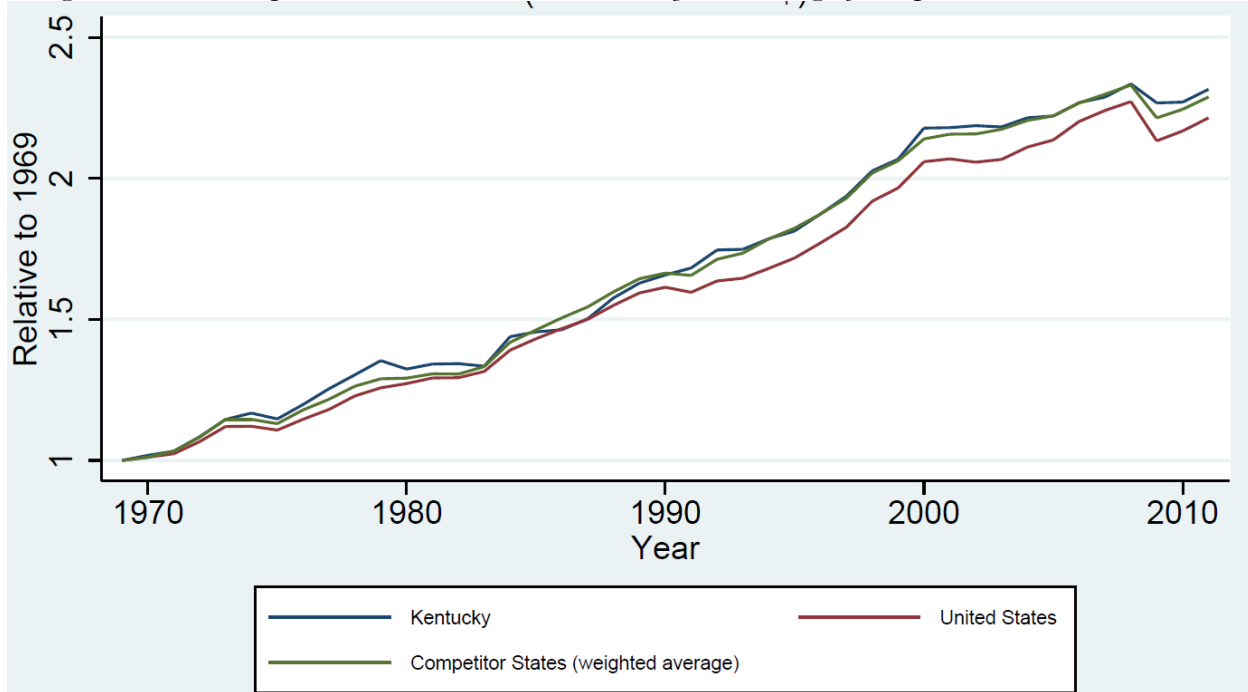
5.1.1 *Income Growth and Level*

Figure 5.1A illustrates the trend for real income per capita for Kentucky, a weighted-average of its competitor states, and the U.S. average from 1969 – 2011 where income is measured relative to 1969. As the figure shows, the growth pattern for Kentucky and its competitor states have been virtually the same and very similar to the United States average prior to 1990. After 1990 growth rates for the U.S. slowed but continue strong for Kentucky and its competitor states. The decrease in per capita income in 2008 was relatively mild for Kentucky compared to its competitors and particularly compared to the United States average. By 2011 Kentucky per capita income returned to its 2008 peak while it still lags for the U.S. as a whole and Kentucky's competitor states. More detail on Kentucky and its competitor states can be found in *Table 5.1* in the *Appendix*.

Figure 5.1B compares the per capita income for Kentucky and its competitor states relative to the U.S. average for 2010. Kentucky's per capita income is eighty percent of the U.S. average making it the third lowest among the states, virtually the same as West Virginia's and only slightly above Mississippi. The only states above the U.S. average are Illinois and Virginia.³⁶

³⁶It is important to note these are nominal dollars and not adjusted in cost of living differences among states.

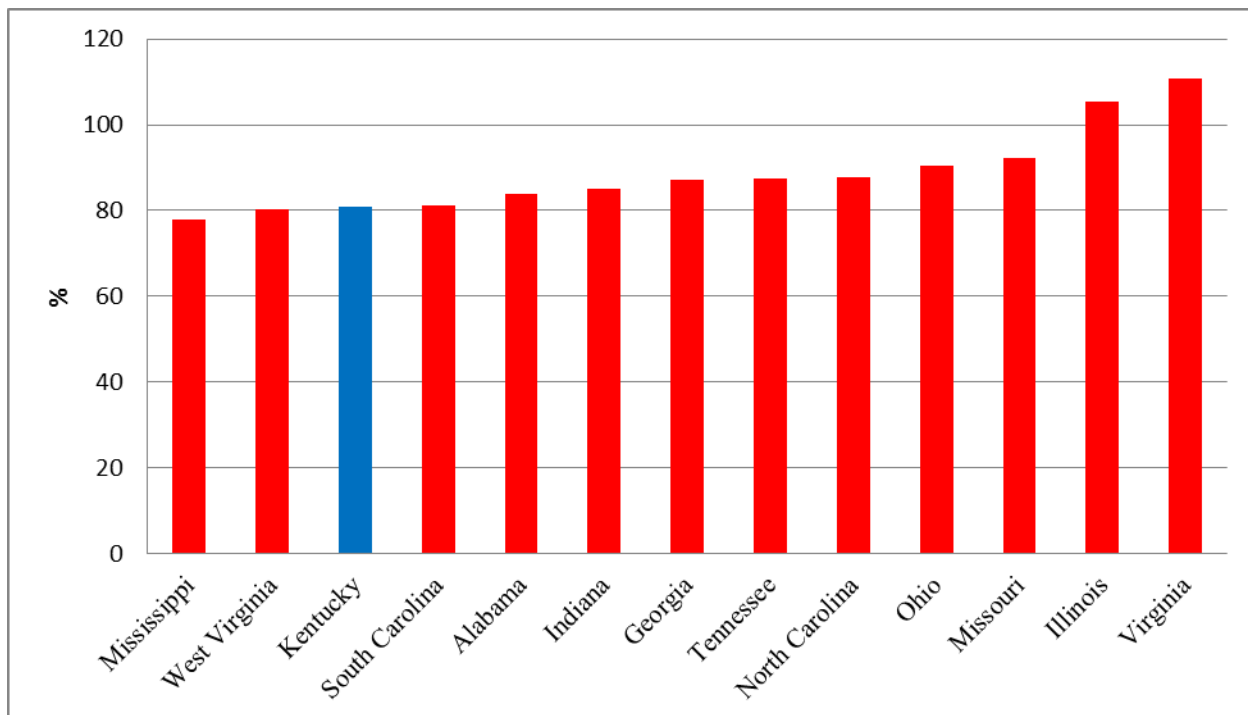
Figure 5.1A: Per Capita Income relative to 1969, Kentucky and Average of Competitor States, 1969 – 2011



Note: All series are normalized to one in 1969.

Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.1B: Income per Capita as Percentage of U.S. Average, Kentucky and Competitor States (2010)



Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

5.1.2 Population Growth

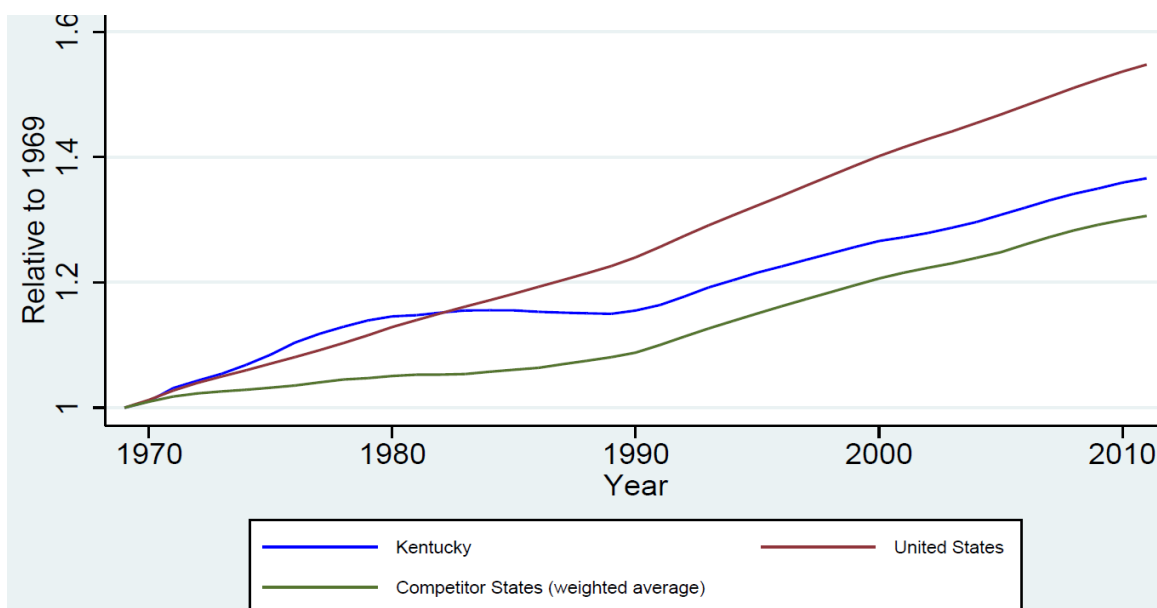
Figure 5.2 shows trends in population for Kentucky, its competitor states, and the U.S. average. For each population, relative to 1969 is plotted. Kentucky's population has grown by approximately thirty percent in this period, slightly above the average of its competitor states but below the U.S. average. Kentucky's population saw rapid growth in the 1970's and was flat (0.07%) in the 1980's, rebounding in the 1990's. In the *Appendix, Table A.5. 2* provides detailed information about the annual population growth rate by decade from 1969 to 2011 for Kentucky and its competitor states as well as total growth from 1969 to 2011 and 2001 to 2011.

5.1.3 Earnings

Figure 5.3A illustrates the growth in real private earnings per employee, for Kentucky and its competitor states, from 1969-2010. The states form 5 distinct groups, with Virginia demonstrating the highest growth at nearly 80% over this time period. Kentucky's growth, at nearly 35%, occupies a category with Missouri and Illinois that is ahead of the lowest group (i.e., Ohio, Indiana, and West Virginia), but still trailing 9 of the 12 competitor states. *Table A.5.3* provides the annual growth rate in private earnings per employee for the U.S., competitor states in aggregate, Kentucky and each of the states, for various time periods, including 1969 to 2010.

Figure 5.3B shows the growth in real private earnings per employee, for Kentucky and its competitor states, from 2001-2010. The economic downturn that began toward the end of 2007 has taken its toll on private earnings. Seven of the states, including Kentucky, experienced a real decline in private earnings per employee from 2001 to 2010. Ohio suffered the largest decline of 8% while Virginia's experienced an increase of slightly more than 4%. Kentucky's decline in real private earnings from 2001-2010 was nearly 2%.

Figure 5.2: Population Relative to 1969, Kentucky and Average of Competitor States, 1969 – 2010



Note: All series are normalized to one in 1969.

Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

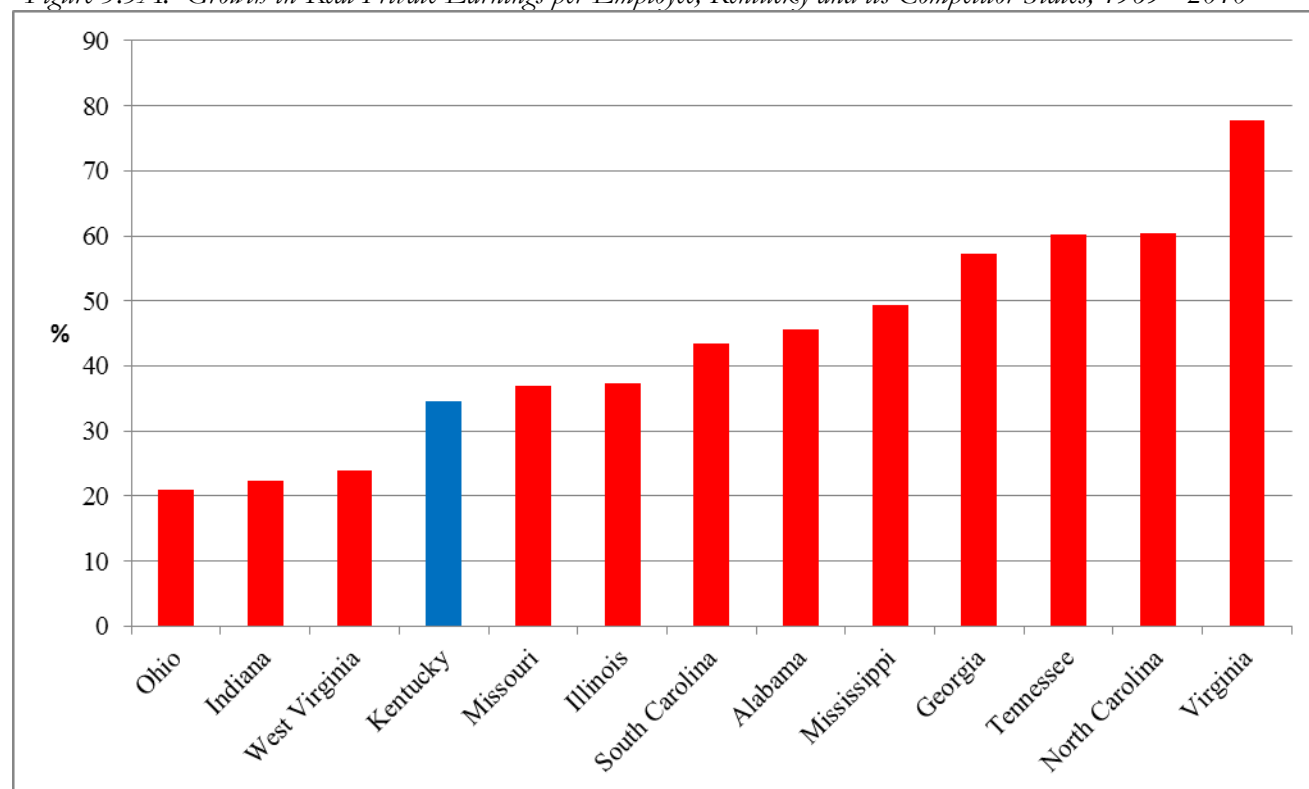
Figure 5.3C shows the private earnings per employee relative to the U.S. average, Kentucky and its competitor states (\$2010). Unsurprisingly, these data are similar to those presented in Figure 5.1B, which show Kentucky at about 80% of the U.S. average for both per capita income and private earnings per employee.

5.1.4 Employment

Figure 5.4A presents the growth in total employment, for Kentucky and its competitor states, from 1969-2010. At over 140%, Georgia experienced the largest increase in total employment during this period—driven by the meteoric growth of Atlanta. Kentucky, with a growth of nearly 80%, is firmly in the middle of the pack of competitor states. Ohio experienced the lowest growth—about 40%.

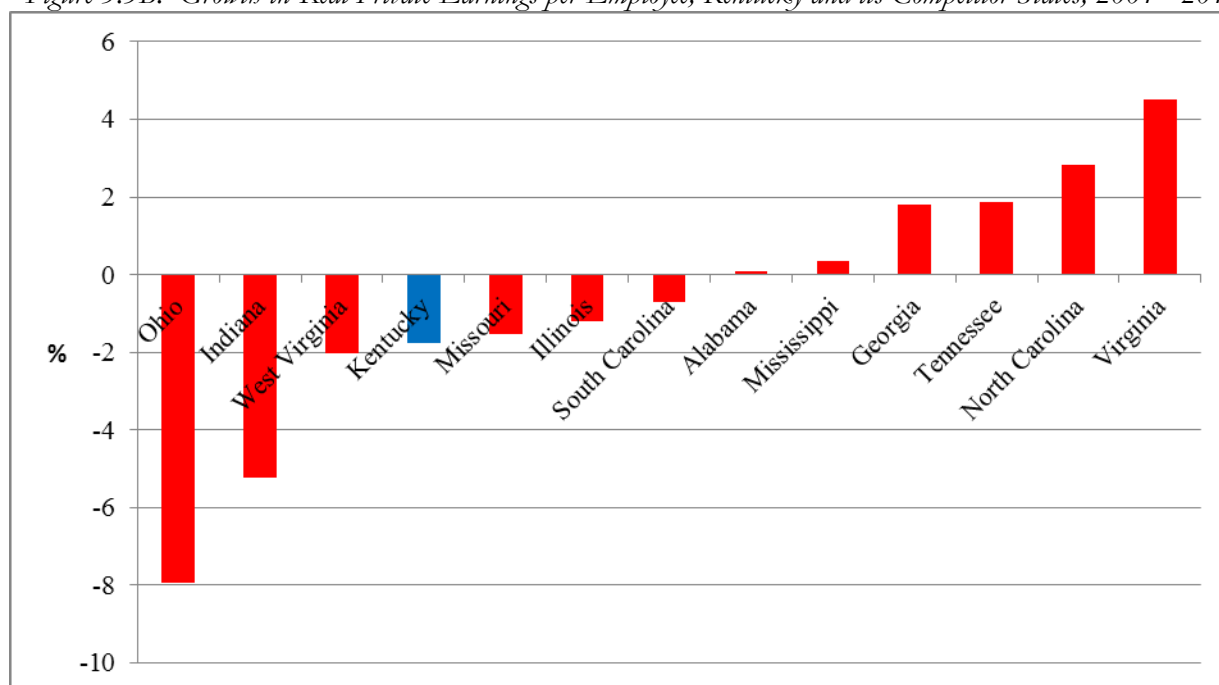
Figure 5.4B shows the growth in total employment, for Kentucky and its competitor states, from 2001-2010. In the more recent period of 2001 to 2010, Kentucky's total employment grew about 3%, which lagged Georgia (about 9%), the leading state, but was higher than six other states—three of which experienced declines in total employment (i.e., Ohio, West Virginia, and Illinois).

Figure 5.3A: Growth in Real Private Earnings per Employee, Kentucky and its Competitor States, 1969 - 2010



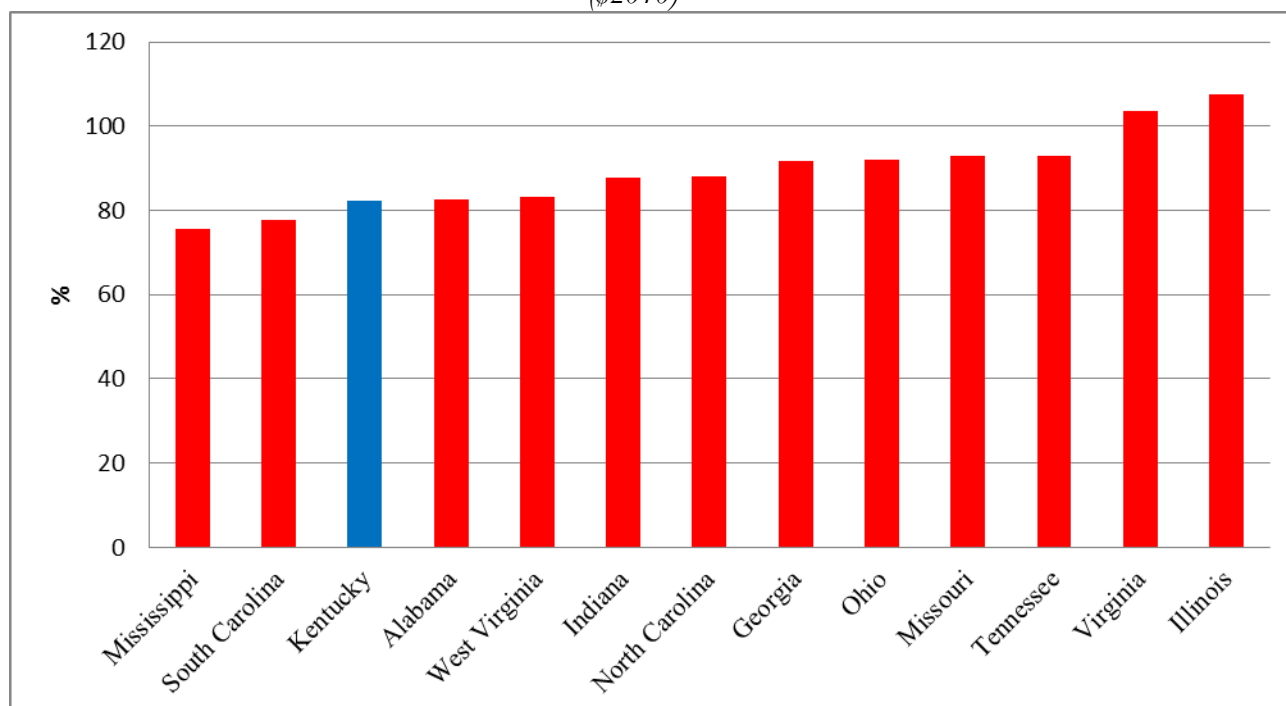
Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.3B: Growth in Real Private Earnings per Employee, Kentucky and its Competitor States, 2001 - 2010



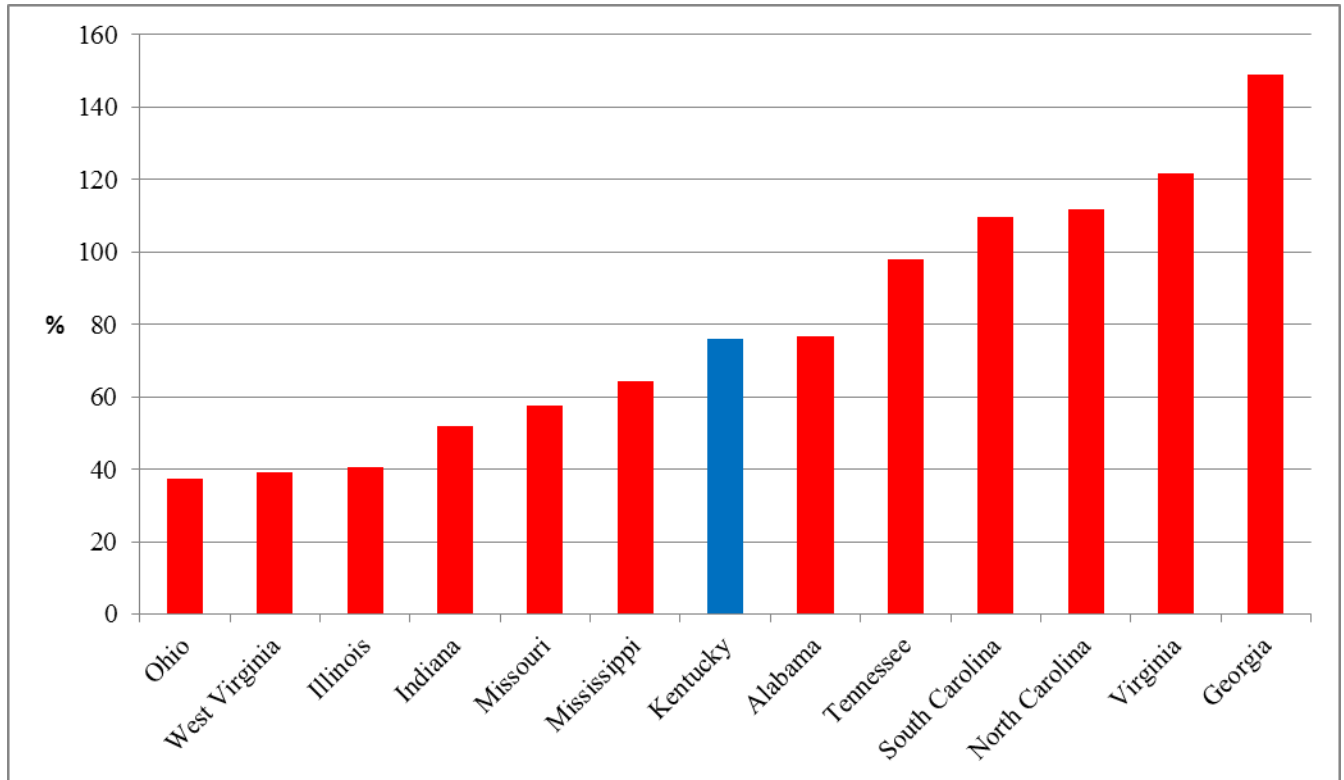
Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.3C: Private Earnings per Employee relative to the U.S. Average, Kentucky and its Competitor States (\$2010)



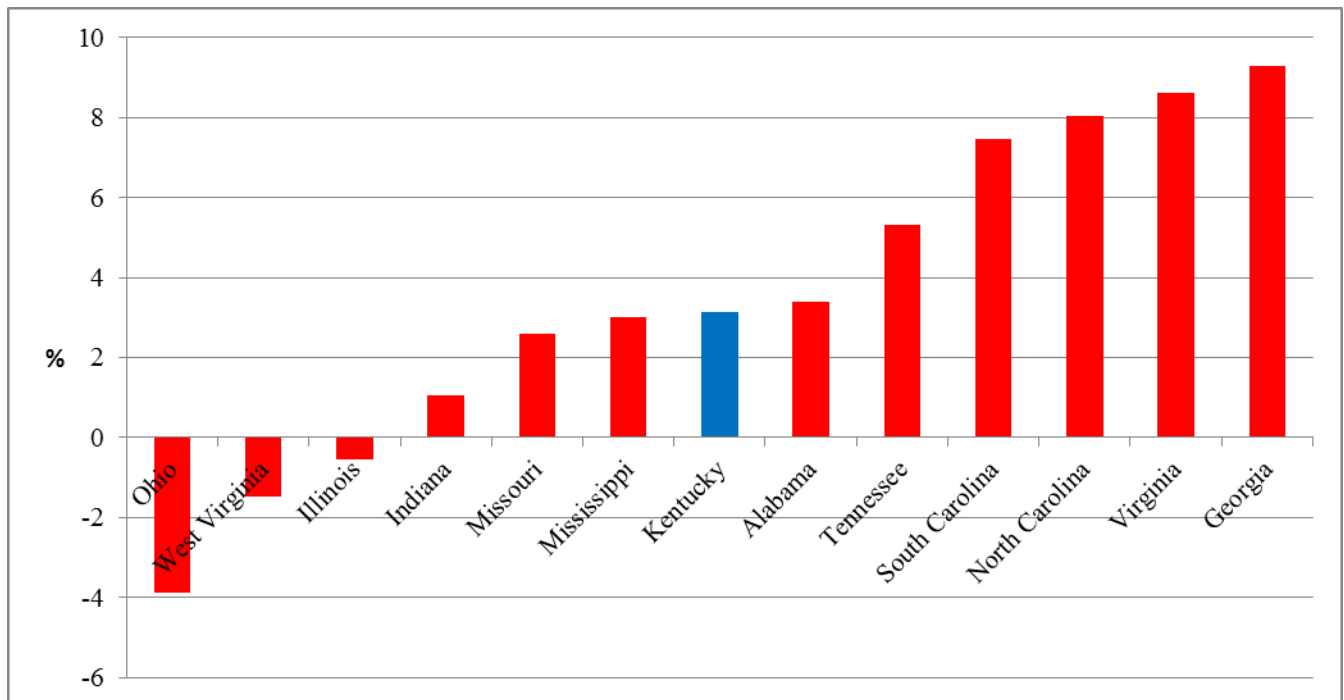
Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.4A: Growth in Total Employment, Kentucky and Competitor States, 1969 – 2010



Source: Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.4B: Growth in Total Employment, Kentucky and Competitor States, 2001 – 2010



Source: Authors' calculations and Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

5.2 *Comparisons of Economic Growth on Kentucky Borders*

Now, rather than comparing economic growth based on entire states, we consider growth along Kentucky's borders. We do this primarily for two reasons: first, given Kentucky's shape and distribution of population, economic activity on its borders is large and therefore Kentucky is more prone to competitive pressures from other states than most other states. Second, borders are a unique opportunity to consider the differences state policies might cause in economic conditions because of the similarity of other economic considerations at borders. Thus, for example, Albany, IN and Jefferson County are in the same metropolitan area with both areas reasonable commutes for households and both areas have access to the greater Louisville market. One of the primary differences between the two areas is that one is Kentucky and one is in Indiana, each subject to the state policies, including but not exclusively tax policy, in their respective states.

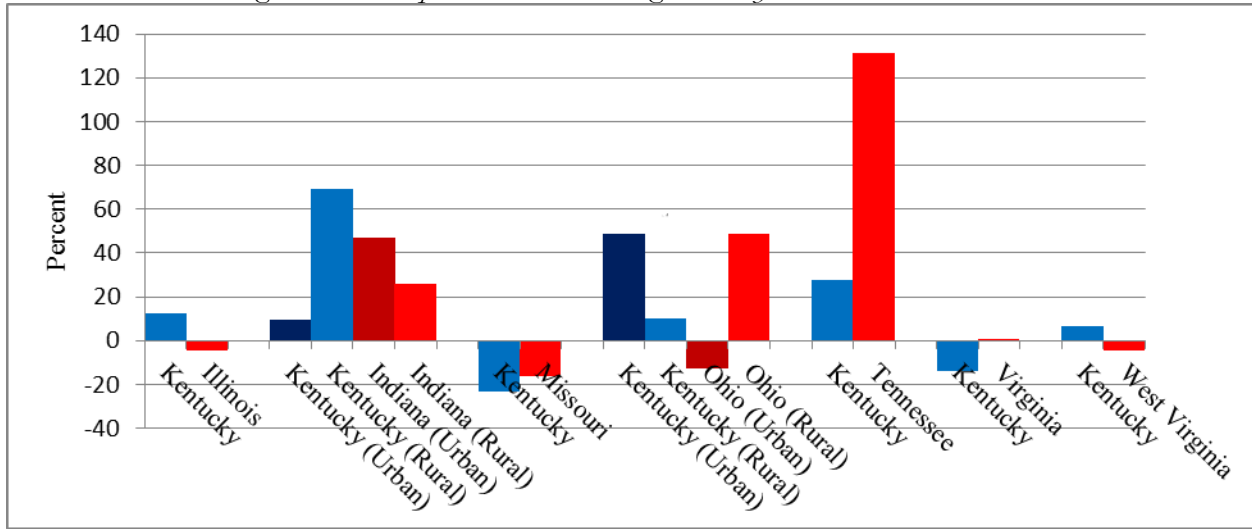
We make comparisons on economic growth on Kentucky's borders by matching Kentucky counties along the border with counties in the bordering state. Comparisons are made state by state (Kentucky/Illinois; Kentucky/Tennessee, etc.) and distinguishing rural and metropolitan areas (Louisville MSA and Cincinnati MSA) as well. Data on the measures of growth come from the Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

For these state borders we compare growth for five measures: population (*Figure 5.5A*), employment (*Figure 5.5B*) real personal income per capita (*Figure 5.5C*), real earnings (*Figure 5.5D*), and real earnings per employee (*Figure 5.5E*).

In *Figure 5.5A*, we can see that population in Kentucky counties along the Illinois grew between 1969 and 2010 while it actually declined in the Illinois counties. Along the Indiana border Kentucky population grew much faster than in Indiana but slower in the urban areas (Louisville). Given that in the Louisville area Kentucky would have been much more developed in 1969 than the Indiana side this is probably not surprising. Population in both Missouri and Kentucky border counties declined with little change in Kentucky's borders with West Virginia and Virginia. In the urban Kentucky-Ohio border (Cincinnati) population actually decreased in Ohio but increase by about fifty percent in Kentucky. Most noticeable are the dramatic differences in population growth along the Kentucky-Tennessee border during this period.

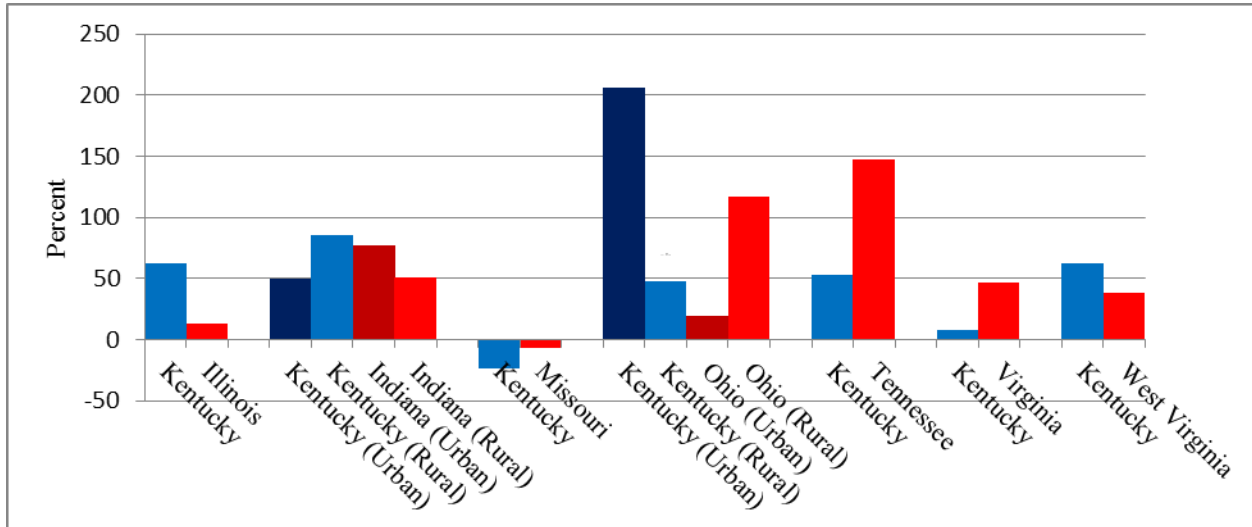
Not surprisingly, the figure for employment growth (*Figure 5.5B*) mostly mirrors that for population growth with a few differences worth noting. First, the large increase in employment in the Kentucky border counties in the urban Kentucky-Ohio border. Note also that employment in the Kentucky counties along the Kentucky-Tennessee border increased much more than the population did, probably explained by higher labor force participation.

Figure 5.5A: Population Growth along Kentucky's Borders, 1969- 2010



Source: Authors' calculations and Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Figure 5.5B: Employment Growth along Kentucky's Borders, 1969- 2010



Source: Authors' calculations and Bureau of Economic Analysis, Regional Economic Information System (REIS) files.

Unlike some of the pronounced differences in population and employment growth along Kentucky's borders, as can be seen in *Figure 5.5C* growth in real personal income per capita is quite similar along all of Kentucky's borders. Growth in earnings per employee (*Figure 5.5D*) shows some differences. Most noticeably earnings per employee had appreciably greater growth in Kentucky than Tennessee. Earnings per employee in Kentucky border counties grew at a faster rate than those in their Illinois and rural Indiana neighboring counties. In contrast, there was significantly greater growth in earnings per employee in West Virginia than Kentucky.

Figure 5.5C: Real Personal Income per capita Growth along Kentucky's Borders, 1969- 2010

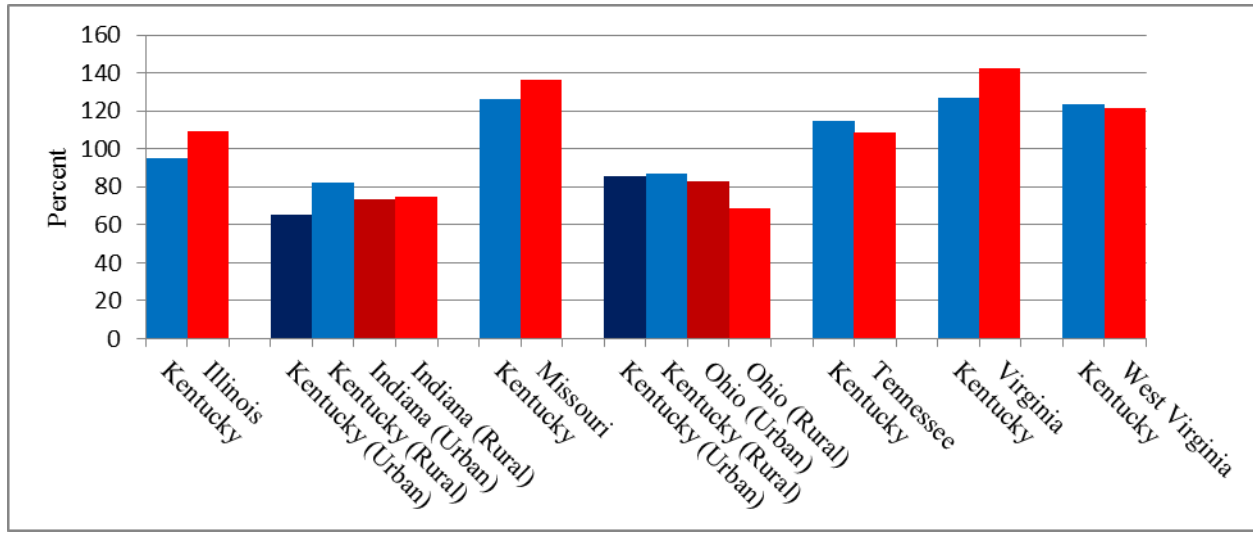
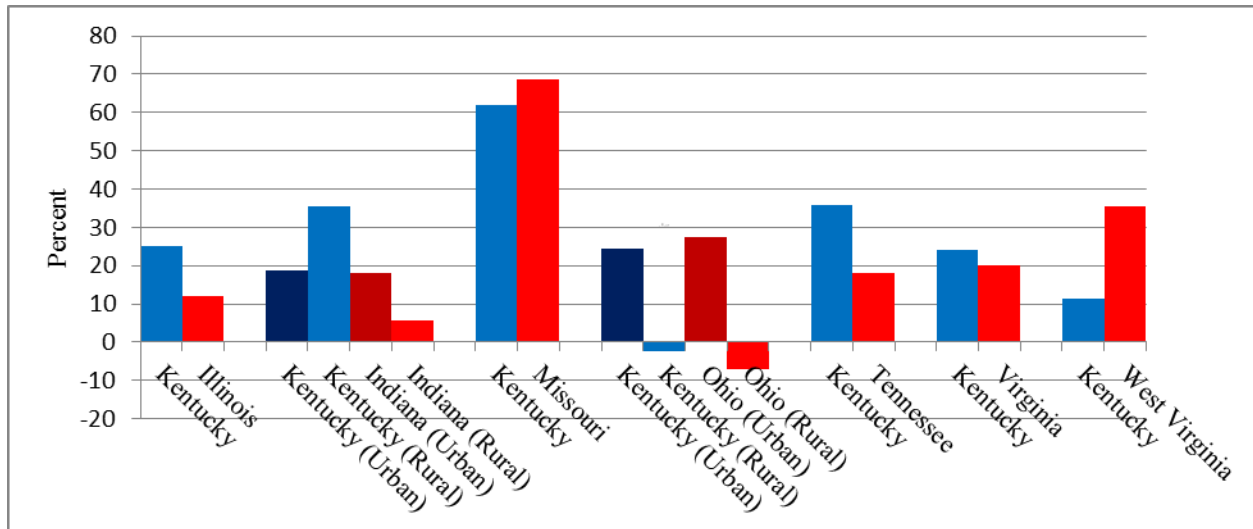


Figure 5.5D: Real Earnings per Employee per capita Growth along Kentucky's Borders, 1969- 2010



5.3 The Burden of Taxes on Businesses in Kentucky and its Competitor States

In Section 2, we provided an overview of Kentucky's tax structure and offered some comparisons with its competitor states. To better understand Kentucky's competitive position a closer examination of its business tax structure is warranted. Then relying on several recent studies of business taxation, we offer a summary of Kentucky's business tax structure and how it compares to its competitors.

What constitutes a tax on business? We follow the approach adopted in a number of studies done by the Council on State Taxation (COST). The list of business taxes as well as total 2011 tax collections for state and local for governments for the United State and Kentucky are found in *Table 5.1*.

Table 5.1: State and Local Business Taxes 2011, United States Total and Kentucky

Business Tax	United States Total		Kentucky	
	\$Billion	%Total	\$Billion	%Total
Property Tax on Business Property	244.9	38.0%	2	29.0%
General Sales Tax on Business Inputs	129.7	20.1%	1.3	18.8%
Corporate Income Tax	46.3	7.2%	0.6	8.7%
Unemployment Insurance	41.2	6.4%	0.5	7.2%
Business and Corporate License	37.3	5.8%	0.7	10.1%
Individual Income Tax on Business Income	36.3	5.6%	0.5	7.2%
Excise Taxes	35	5.4%	1.3	18.8%
Public Utility Taxes	28.8	4.5%		
Insurance Premium Taxes	17.2	2.7%		
Severance Taxes	14.8	2.3%		
Other Business Taxes	12.4	1.9%		
Total	\$ 643.9		\$ 6.9	

Source: Andrew Phillips, Robert Cline, and Hon Ming Quek, *Total State and Local Business Taxes: State-by-State Estimates for fiscal year 2011*, Ernst & Young/COST (July 2012).

Figure 5.6 shows the distribution of business tax collection from the major revenues sources for the state and local government in the United States and Kentucky. As the figure suggests, Kentucky sources of business taxes do not differ substantially from those of the United State average with the exception of the property tax and excise taxes. On average, 42 percent of business taxes for state and local governments in the United States is from the property tax while it is only 29 percent in Kentucky. In contrast, Kentucky state and local governments collect almost 10 percent of its business tax revenue from excise taxes while the U.S. average is slightly more than 5 percent.³⁷

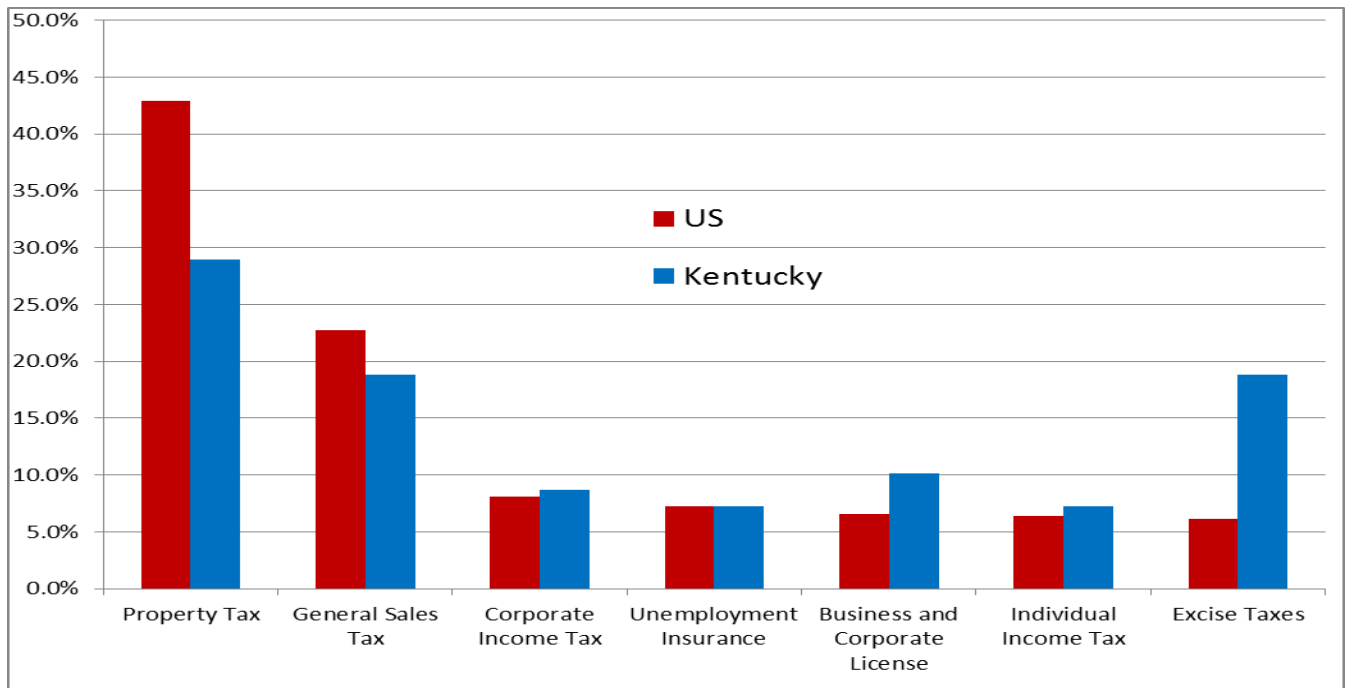
How does Kentucky compare to its competitors in the level of business taxation? Figure 5.7 illustrates business taxation as a share of private sector gross state product (GSP) for fiscal year 2011. The average competitor states has business taxes equal to 4.2 percent of GSP; in Kentucky it was 5.5 percent in 2011, ranking third highest behind Mississippi and West Virginia.

An alternative ranking of state and local business taxation is offered in another study by Ernst and Young for the Council on State Taxation.³⁸ In this study they consider five representative facilities (Headquarters, Research and Development, Office and Call Center, Durable Manufacturing, and Non-Durable Manufacturing). Then based on information on the assets, liabilities, receipts, deductions, and net income of these facilities determine the impact state and local taxes have on the rate of return on the facility investment over a period of thirty years. Thus if state and local taxes reduce the rate of return from 15% to 13% this is an effect rate of 13.3% $((15-13)/15)$.

³⁷The low use of the property tax on business property can be seen from the rankings of Louisville's property tax burden for commercial and industrial property as determined in "50-State Property Tax Comparison Study," (Minnesota Taxpayers Association and the Lincoln Institute (April 2011). For commercial property, Louisville ranked 31st – 33rd highest effective property tax rate of the 50 largest cities depending on the nature of the commercial property assessed. For industrial property it ranked between 45th and 47th.

³⁸Robert Cline, Andrew Phillips, and Thomas Neubig, "Competitiveness of State and Local Business Taxes on New Investment: Ranking States by Tax Burden on New Investment," Ernest & Young and COST (April 2011).

Figure 5.6: Distribution of Business Taxation, United States Total and Kentucky, 2011



Source: Authors' calculations and Andrew Phillips, Robert Cline, and Hon Ming Quek, *Total State and Local Business Taxes: State-by-State Estimates for fiscal year 2011*, Ernst & Young/COST (July 2012).

Figure 5.8 reports effective tax rates on new investment for Kentucky and its competitor states. As the effective tax rate (ETR) for five different facilities had to be averaged a weight for the averaging had to be used. The ETR we report is based on a weighting by capital invested in the facility; alternatively jobs could be done. The order of the states in is relatively unchanged by the weighting so we restrict ourselves to presenting the findings based on the capital weighting.

In this measure of business taxation, Kentucky ranks 4th among the 13 states, a stark difference in its ranking based on business taxes as a percentage of gross state product. Only Ohio Illinois, and Virginia have lower effective tax rates. The effective tax rate is 6.5% for Kentucky compared to an average for its twelve competitors of 7.69%.

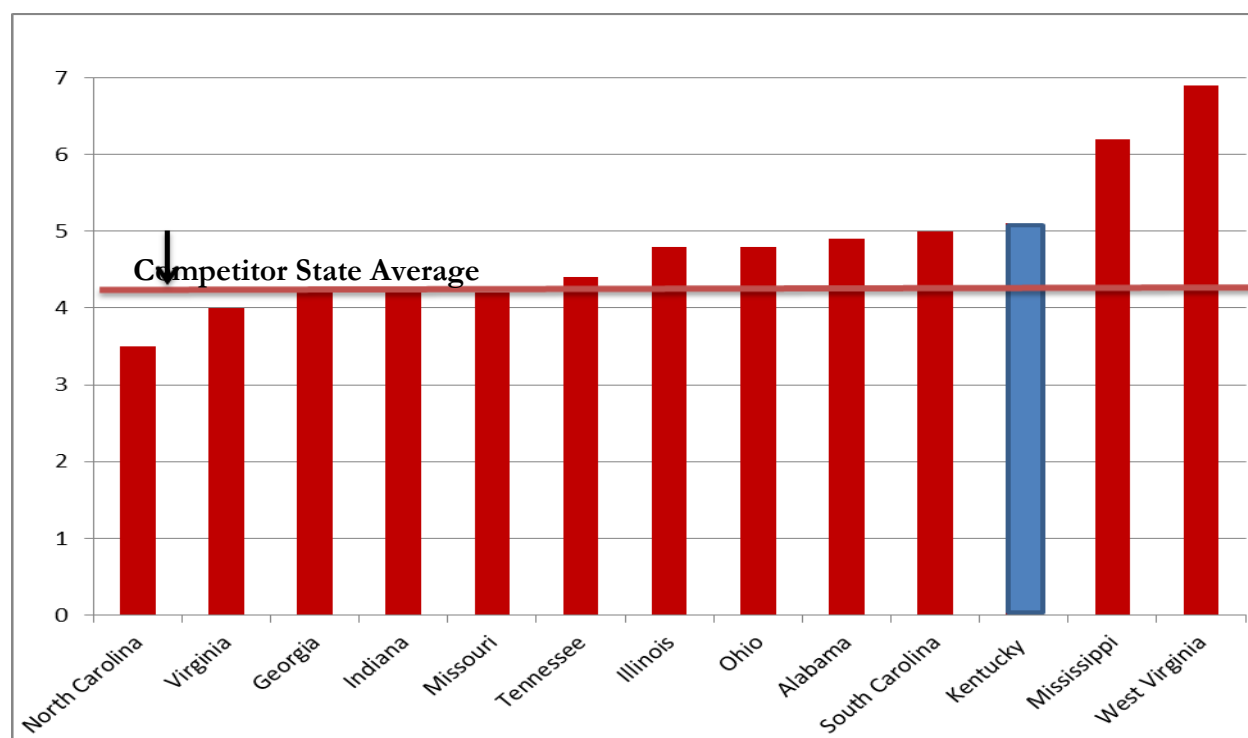
Thus while the ranking of Kentucky among its competitors based on business taxes as percentage of gross state product is high, perhaps concerns about its competitive position are somewhat alleviated based on the rankings based on the Ernest & Young/COST ranking of the effective tax rate on new investment. To the extent this ranking generalizes to a broader range of investment, it suggests that Kentucky might be fairly successful at targeting lower tax rates on more elastic business capital, specifically new investment.

A similar methodology was employed by a 2012 study by the Tax Foundation and KMPG to examine business tax burdens.³⁹ In addition to looking at the tax burden on new investment, the

³⁹“Location Matters: A Comparative Analysis of State Tax Costs on Business,” Tax Foundation and KMPG, Washington, DC 2012.

study looks at new firms, eligible for tax incentives, and as a mature firm not eligible for incentives. This distinguishes it from the COST study that does not incorporate incentives into their calculation. As with the COST study, the Tax Foundation/COST study considers alternative types of firms: corporate headquarters, R & D facilities, a retail store, call center, distribution center, and capital-intensive manufacturing. The results of the study are generally consistent with that of the COST study. Overall, Kentucky ranks 18th among all states and 5th among its competitor states for (low) tax burdens on mature firms. For new firms, Kentucky ranks 7th among all states and 3rd among competitor states.

Figure 5.7: Business Taxes as a Percentage of Private Sector Gross State Product FY2011



Source: Authors' calculations and Andrew Phillips, Robert Cline, and Hon Ming Quek, *Total State and Local Business Taxes: State-by-State Estimates for fiscal year 2011*, Ernst & Young/COST (July 2012).

5.4 Taxes and Economic Development: Do taxes affect Business Activity?⁴⁰

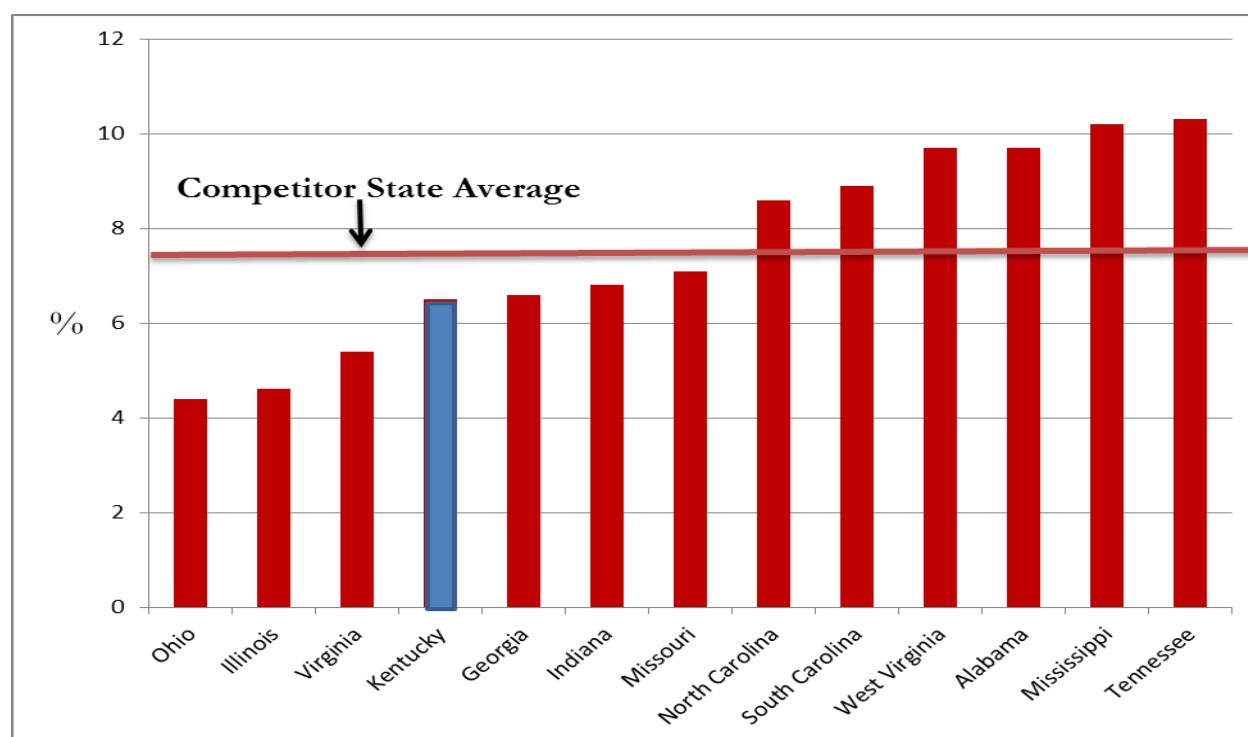
In this section, we have compared both Kentucky's economic growth and the tax burden it imposes on burden with those of its competitor states. In Section 2 we provided broader comparisons of its tax rates and structure with those of its competitors. Given both comparisons in economic growth and taxes, it important to understand to what extent the two are related. More specifically, do taxes affect business activity?

The answer to this question has been the topic of hundreds of studies by economists during the past forty years. Obviously, we do not intend to review this myriad of studies but instead summarize the results focusing on relatively more recent studies. Based on the earliest studies of taxes and

⁴⁰This section of the report draws heavily on William H Hoyt and John Garen, "Fiscal Policy and Local Economic Development, National Center for Real Estate Research, Washington, DC (July 2005).

business activity, the answer to this question would be ambiguous. However, the answer from most recent studies, employing more sophisticated analysis, better data, and accounting for the role of public services, is yes – taxes do affect the level of employment, employment growth, and firm location among states. The question of more relevance to current research is how much do taxes matter?

Figure 5.8: Effective Tax Rate on New Investment for Selected Industries Weighted by Capital, Kentucky and Competitor States



Source: Robert Cline, Andrew Phillips, and Thomas Neubig, “Competitiveness of State and Local Business Taxes on New Investment: Ranking States by Tax Burden on New Investment,” Ernest & Young and COST (April 2011).

Three reviews⁴¹ of this literature provide a summary of the magnitude of the impact of taxes on economic activity using the concept of *elasticity* as was used in our examination of the growth of tax revenues relative to growth in personal income. Here elasticity tells us the percentage change in our measure of business activity (employment, gross state product, birth of firms) as a result of a one percent increase in taxes. Thus an elasticity of -0.5 means that a 10 percent increase in taxes reduces business activity (as measured) by 5 percent.

Table 5.2 summarizes the findings of more recent studies of the impacts of taxes on business activity. The table provides a number of different measures of business activity that have been examined in the literature with the most common being employment or employment growth. Studies have

⁴¹In summarizing the findings of this extensive literature we draw heavily on three review studies: Timothy Bartik *Who Benefits from State and Local Economic Development Policies?* W. E. Upjohn Institute for Employment Research, Kalamazoo, MI (1991); Michael Wasylenko “Taxation and Economic Development: The State of the Economic Literature,” *New England Economic Review*, (March/April 1997); Joseph Phillips and Ernest Goss “The Effect of State and Local Taxes on Economic Development: A Meta-Analysis,” *Southern Economic Journal* (1995).

generally focused on the impact of all taxes, generally measured as a tax revenue as share of gross state product or per capita or employee, or business taxes on business activity. The first number in the each cell is the average elasticity found in the studies with the numbers in parenthesis giving the range of estimated elasticities.

A few comments and explanations: while there is a great deal of variation in the reported elasticities it appears that employment and investment are the most responsive to total taxes though manufacturing employment is much less responsive than aggregate employment. Note that we report separately “All Measures” and “All Measures controlling for Public Services” and “Employment or Employment Growth” and “Employment controlling for Public Services”. This distinction is made because economists understand that increases in taxes also mean increases in government expenditures on services including higher education, K – 12 education, infrastructure, and recreational facilities. By directly increasing productivity through expenditures on education and infrastructure, the business climate improves. Indirectly, increases in public services that enhance the quality of life make the state more attractive to potential employees of firms. Of course, some government expenditures do neither. Most studies of the impact of taxes on business activity that have been done by economists have attempted to isolate and separate the effects of the taxes and the use of the revenues from these taxes. Then in *Table 5.2* “All Measures controlling for Public Services” and “Employment controlling for Public Services” should be interpreted as the impact of taxes in the absence of any productive use of the tax revenue from these taxes. “All Measures” and “Employment or Employment Growth” include the results of studies that do not isolate the effects of the taxes and the expenditures financed by the taxes. Not surprisingly, then, when, the impact of taxes is isolated from how their revenues are used, taxes are found to have a greater negative impact on business activity with an estimated average elasticity of $-.78$ – a 1 percent increase in taxes decrease employment or employment growth by .78 percent.

Table 5.2: Estimated Tax Elasticities from Inter-State Studies

Measure of Business Activity	Tax Elasticity for Total Taxes	Tax Elasticity of Business Taxes
All Measures	-.22 (-.73 to -.04)	
All Measures controlling for Public Services	-.33 (-.88 to -.07)	
Employment or Employment Growth	-.58 (-.85 to 0)	-.11 (-.16 to 0)
Employment controlling for Public Services	-.78 (-.81 to -.75)	
Manufacturing Employment	-.10 (-1.54 to .05)	(-.26 to 0)
Investment	-.60 (-1.02 to .54)	-.20 (-.36 to -.10)
Gross State Product	-.07 (-.88 to .27)	-.14
Birth of Manufacturing Firms	-.18 (-.4 to 0)	-.20 (-.157 to .6)

6. *Simplicity and Compliance Issues in the Kentucky Tax System*

Somewhat ironically, simplicity and compliance might be two of the more complex issues to address when considering reforming state taxes. In this section, we summarize some of the limited evidence on the administrative and compliance costs of the individual income tax and the general sales tax, provide a general discussion of how the changes in tax structure might affect simplicity and compliance.

6.1 *Simplicity and Compliance in the Income Tax*

In thinking about simplicity of a tax code it is useful to attempt to quantify the costs of administrating and complying with the code. There are no estimates of either administrative or compliance costs of the Kentucky individual income tax code. There are, however, estimates of the costs of compliance with the federal income tax code as well as estimates of the IRS costs of administration.

Slemrod (2005) reports that the IRS has a ratio of administrative costs to revenue collections of 0.52% or \$0.52 per \$100.⁴² While administrative costs of the Kentucky state income tax, per dollar of revenue, likely to be higher than for IRS administrative costs of administrating the federal income tax it is probably still insightful.

More substantial are the costs associated with compliance of the federal income tax. Numerous studies have attempted to estimate these compliance costs. Critical to these estimates is an estimate of the amount of time undertaken in compliance including completion of forms and maintenance of records. Additional costs include tax planning and tax audits and litigation. J. Scott Moody, Wendy P. Warcholik, and Scott Hodge estimated the compliance costs for the federal income tax in 2005 at \$265.1 billion (\$2005) or 22.2% of federal income tax revenue.⁴³ Their estimate of the time spent in compliance was 6 billion hours. This figure is probably at the extreme – in an earlier Tax Foundation study, J. Scott Moody estimates individual filing costs in 2002 of \$104 billion when evaluating time used in compliance at \$30 an hour.⁴⁴

While these compliance cost estimates are for the federal income tax, given the similarity of the Kentucky income tax to the federal tax, they suggest that high compliance costs for the Kentucky tax as well. Then some possible options that might be considered to simplify and reduce compliance costs of the Kentucky individual income tax are:

- **Significant Increase in Standard Deduction and/or Exemptions.** Perhaps the most effective method of simplifying taxes is not having households file taxes. Major federal reforms, most notably the Tax Reform Act of 1986, did simplify, not because it reduced the number of tax brackets from 15 to 3 but because the significant increase in the standard deduction dramatically increased the number of households who did not need to file.

⁴²See Joel Slemrod, “The Economics of Tax Evasion,” *The Journal of Economic Perspectives* (Winter 2007). Reported costs are from an international comparison done by the OECD.

⁴³J. Scott Moody, Wendy P. Warcholik, and Scott Hodge. “The Rising Cost of Complying with the Federal Income Tax,” Special Report #138, Tax Foundation (December 2005).

⁴⁴J. Scott Moody. “The Cost of Complying with the Federal Income Tax,” Tax Foundation Special Report 112, (2002).

- **Elimination of Itemized Deductions.** This is a central tenant of the flat tax or “post card” tax.⁴⁵ While again, a single rate is argued as simplifying, in fact, taxpayers do not determine their tax payment by calculating a formula involving their marginal tax rates but use a table of tax payments. The complexity of the table is unaffected by the number of tax brackets. However, the flat tax does advocate for elimination of deductions. Much of the complexity and time costs involved with the individual income tax involve calculation of deductions. Again, a larger standard deduction or restricting itemized deductions would reduce the number of taxpayers who would engage in calculating itemized deductions. Currently ten states do not have itemized deductions.⁴⁶
- **Reduce marginal tax rates.** This would probably have minimal impact on simplicity but should increase compliance. If there is less to be gained by underreporting, the incentive to do so should be decreased. International evidence, on the “tax underreporting gap”, shows mixed evidence. The gap estimated for the federal individual income tax of 17% is above the UK value-added tax and Sweden both nations with higher marginal tax rates. Another indication of the extent of noncompliance is the size of the shadow economy.⁴⁷ The United States, among the OECD countries has the smallest shadow economy with the highest being Italy and Greece, very high tax countries.

6.2 *Simplicity and Compliance in the Sales and Use Tax*

Tax collection from businesses, rather than households, is likely to be much lower cost. Of course, as discussed in *Section 4*, collecting taxes from businesses does not change the incidence of sales taxes away from the consumer. In thinking about expanding a sales tax, simplicity, administrative costs, and compliance are all important considerations.

Evidence on the actual costs of administering a state general sales tax are limited. Based on surveys of eight states from 1991 to 1993, John F. Due and John L. Mikesell estimated a cost of \$0.41 to \$1.00 of administrative costs per \$100 of revenue collected.⁴⁸ In an examination of the “Fair Tax,” a federal sales tax in which the tax is collected by state governments, David G. Tuerck, Paul Bachman, and Alfonso Sanchez-Penalver estimate a collection cost of \$0.80 per \$100 of revenue collected.⁴⁹ Of course, what is unclear from this type of analysis is how much additional administrative costs are incurred.

Of course in addition to the administrative costs, the general sales tax imposes additional costs on retailers and other businesses subject to collecting the sales tax. A study by PricewaterhouseCoopers found that in 2003 the average annual state and local retail sales tax compliance costs were \$3.09 for \$100 collected with these costs being much greater for small businesses than large retailers.⁵⁰

⁴⁵The scholarly advocates of the flat tax are Robert E. Hall and Alvin Rabushka, *The Flat Tax*, Hoover Institute Press (1985).

⁴⁶States without itemized deductions in 2011 are Connecticut, Illinois, Indiana, Michigan (no standard deduction as well), New Hampshire, New Jersey, Ohio, Pennsylvania (no standard deduction), Rhode Island, Tennessee, and West Virginia (from Rick Olin, *Individual Income Tax Provisions in the States*,” Wisconsin Legislative Fiscal Bureau (July 2012).

⁴⁷See Slemrod (2007).

⁴⁸John F. Due and John L. Mikesell. *Sales Taxation*, 2nd Edition Washington, DC Urban Institute Press (1994).

⁴⁹David G. Tuerck, Paul Bachman, and Alfonso Sanchez-Penalver. “Tax Administration and Collection Costs: The Fair Tax vs. the Existing Federal System,” The Beacon Hill Institute at Suffolk University (September 2007).

⁵⁰PricewaterhouseCoopers. “Retail Sales Tax Compliance Costs: A National Estimate,” Volume One: Main Report (April 2006)

If additional goods and services are to be included in the sales tax base, the ability of Kentucky residents to be able to purchase these services from out-of-state vendors including online purchases is critical. While Kentucky has a use tax evidence suggests that few taxpayers report amounts close to their actual out-of-state purchases subject to Kentucky taxes. Effective compliance to the sales tax requires that the tax be placed on goods and services for which out-of-state purchases are limited or enforcement of the use tax is increased.

The administrative costs of expanding the sales tax base are lower if they are applied to services and goods that are already collecting and reporting sales tax revenue on other purchases made at the business. Thus, for example, an automotive repair shop is providing both services (labor) and tangible products (oil, parts) will already be paying the tax on the parts and other products sold to the customers. As the PricewaterhouseCoopers study suggests, compliance costs will be much lower for larger retailers and retailers from whom taxes are already collected.

6.3 How Does Kentucky Compare in Tax Administration?

The Council on State Taxation has intermittently produced studies evaluating state tax administration. In a 2010 report, COST evaluates state governments on tax appeals and procedural requirements.⁵¹ The criteria for an effective and independent appeals process includes: the appeals forum must be truly independent; taxpayers are not forced to post bond prior to an independent hearing; the record for further appeals must be established before an independent body; and the arbiter at the hearing must be well-versed in the intricacies of state tax laws and concepts. The procedural elements evaluated consider whether the state has adopted: even-handed statutes of limitations for refunds and assessments; equalized interest rates on refunds and assessments; due dates for corporate income tax returns at least 30 days beyond the federal due date; adequate time to file a protest before an independent dispute forum; reasonable and clearly defined procedures for filing amended state income/franchise tax returns; and any additional ineffective, burdensome or inequitable practices.

COST undertook a similar survey of practitioners and property tax administrators to assess the administration of the property tax. In this case the criteria was based on: whether the property tax system had standardized filing, remittance, and appeal procedures throughout the state; whether the appeal process for disputes was before an independent tribunal; and whether the property tax burden was balanced and uniform and not shifted onto business taxpayers.⁵²

Results of these scorecards for Kentucky and its competitors are reported in *Table 6.1*. Based on a survey of practitioners and state tax administrators, Kentucky received a “B” in the scorecard on appeals and procedural requirements and a “B+” for property tax administration, one of the 5 top ranked states. Both grades are the highest among the 13 states in both categories.

⁵¹Douglas L. Lindholm and Fredrick J. Nicely. “The Best and Worst of State Tax Administration: Cost Scorecard on Tax Appeals & Procedural Requirements, COST (February 2010).

⁵²Fredrick J. Nicely and Douglas J. Turner. “The Best and Worst of State Tax Administration: Cost Scorecard on State Property Tax Administrative Practices, COST (May 2011).

Table 6.1: COST Grading of States Tax Appeal & Procedures and Property Tax Administration

State	Appeals & Procedure	Property Tax
Alabama	D	C-
Georgia	C-	B+
Illinois	D	D-
Indiana	B	C-
Kentucky	B	B+
Mississippi	B+	C-
Missouri	B	C-
North Carolina	B-	B-
Ohio	B	B-
South Carolina	B	C-
Tennessee	C+	C-
Virginia	A-	C-
West Virginia	B	C-

Source: Douglas L. Lindholm and Fredrick J. Nicely. "The Best and Worst of State Tax Administration: Cost Scorecard on Tax Appeals & Procedural Requirements, COST (February 2010) and Fredrick J. Nicely and Douglas J. Turner. "The Best and Worst of State Tax Administration: Cost Scorecard on State Property Tax Administrative Practices, COST (May 2011).

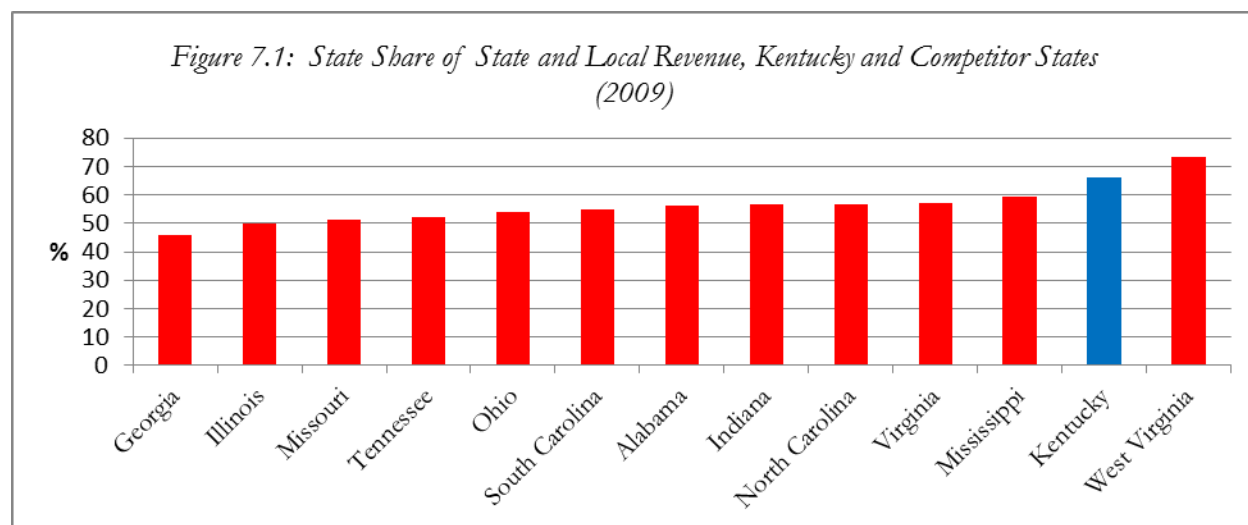
7. Local Tax Issues

While the Commission is primarily focused on issues related to state taxes in Kentucky, proper evaluation of the state tax system cannot ignore the structure of local taxes in Kentucky nor should any reform efforts ignore the ramifications of changes in the state tax structure on local finances.

In this section, we briefly review and put in context the relationship between state and local taxation in Kentucky. As we discussed in Section 2, Kentucky is heavily reliant on the state government as a source of both revenues and expenditures. In addition, the structure of local taxation in Kentucky is in some ways very different from that of its competitors.

7.1 Local Taxation in Kentucky

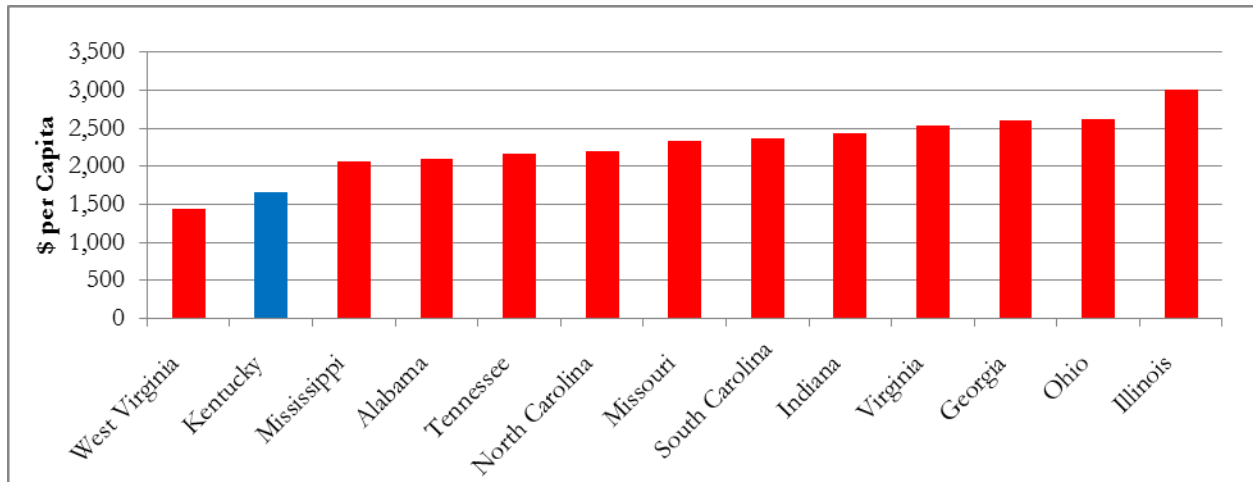
To understand local taxation in Kentucky, first consider what role it plays relative to state taxation. In *Figure 7.1* we show the state share of state and local revenue in Kentucky and its competitor states for 2009. As the figure shows, relative to most of its competitors, revenue collection is extremely centralized in Kentucky. Not surprisingly, as shown in *Figure 7.2*, Kentucky has the second lowest local revenue per capita among its competitors.



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

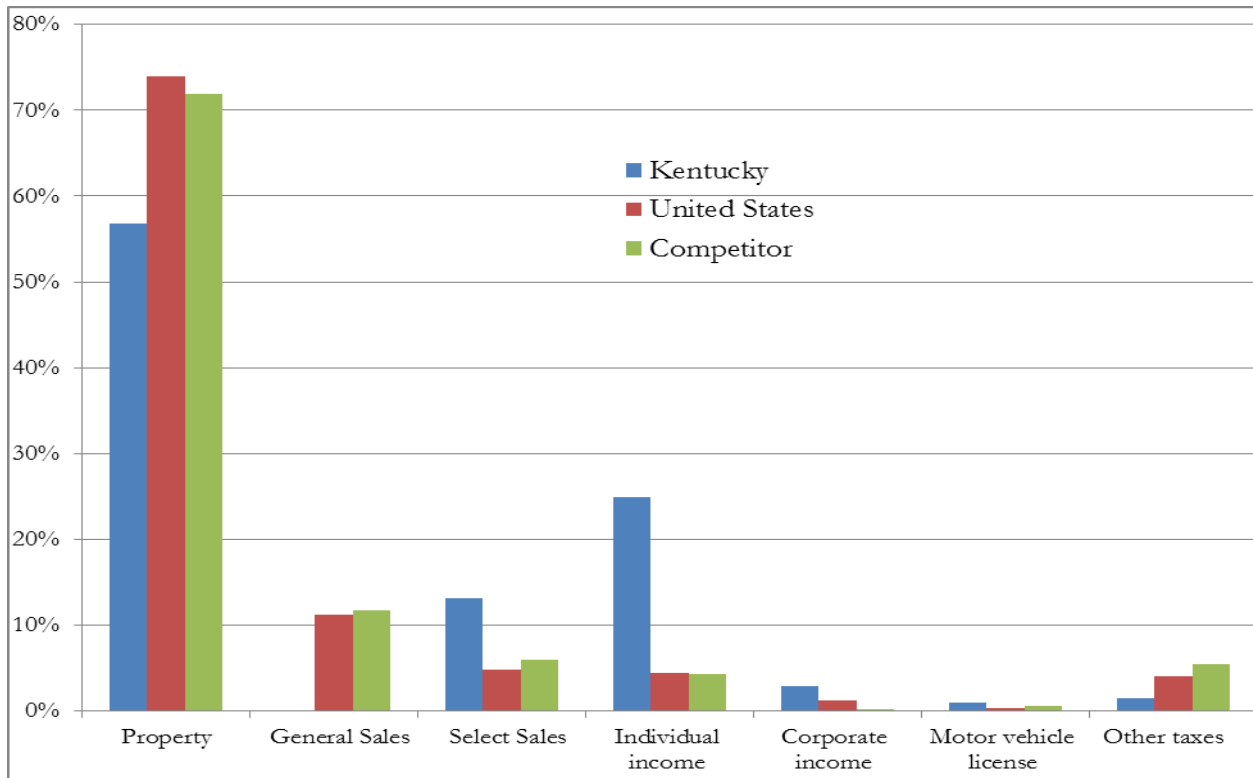
In *Figure 7.3* we compare the distribution of taxes of local governments for Kentucky, its competitor states, and the United States average. As the figure shows, the average distribution of tax revenue for Kentucky's competitor states is quite similar to the average of all states. Both collect over 70% of revenue from the property tax, about 11% from local general sales taxes, and 4% from local income taxes. In contrast, Kentucky collects less than 60% of its local revenue from the property tax, 0% from general sales taxes, and 25% from local income taxes. Kentucky is only one of 15 states with local income (occupational license) taxes and only one of 15 states without a local sales tax option.

Figure 7.2: Total Local Revenue (2009) (per Capita)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

Figure 7.3: Share of Revenue Collections by Tax for Local Governments, Kentucky, Competitor States, and United States Average (2009)



Source: Authors' calculations from 2009 State and Local Government Finance Summary Report, United States Census Bureau, U.S. Department of Census, <http://www.census.gov/govs/estimate/>.

7.2 *Implications of Kentucky's Local Tax Structure on Local Finances*

If, in periods of restricted state budgets, there is a view that local governments in Kentucky will need to be more responsible for responsible for their own funding, Kentucky's current local tax structure might impose some serious constraints on local funding. Property taxation rates and levy limits in Kentucky are constrained by HB 44 and evidence suggests that these property tax limits can severely limit local government spending.⁵³ In addition, there is evidence that businesses have become much more effective in finding ways to avoid paying property taxes further diminishing growth in this base.

A tax base Kentucky relies on heavily, unlike almost all other states, is local income taxes. In the case of Kentucky, it is a local occupation license tax that is imposed on individual earnings at the site of employment. The tax rate, when all local taxes are aggregated, exceed 2% in both Jefferson and Fayette counties with this rate applied from dollar zero of earnings. Given the relatively high rates of state income taxation in Kentucky, particularly when compared to that found in bordering states, additional taxes on income and earnings might prove to put Kentucky in a serious competitive disadvantage.

Given the limited opportunities for growth in the property tax and concerns about competitiveness with regard to the occupational license tax, if local governments are to increase their own revenues, more flexibility in revenue sources, most likely through a local sales tax option might be advisable.

⁵³See William H. Hoyt, Paul A. Coomes, and Amelia M. Biehl. "Tax Limits and Housing Markets: Some Evidence at the State Level," *Real Estate Economics*, January 2011, 39(1).

Section 8: Tax Reform Efforts in Kentucky and Competitor States

8.1 Recent Tax Changes in Competitor States

This section examines tax changes among Kentucky's competitor states since 2007.⁵⁴ Nearly all of Kentucky's competitor states have made tax policy changes, and some have made many, but only the larger adjustments are discussed. We do not refer to all of these as reforms, since in many cases they do not represent what we consider improvements in the tax structure. Ohio's 2005 major tax structure change is discussed first because it represents the biggest revisions by any competitor state in recent years. The changes included: a) phasing out the business tangible personal property tax, b) phasing out the corporate franchise tax, c) phasing in the Commercial Activity Tax (CAT), d) reducing marginal rates in the individual income tax, e) reducing the sales tax rate, f) increasing the cigarette tax rate and g) repealing the 10 percent rollback on business real property tax. Notable on this list are a significant reductions in individual income tax rates to a maximum of 5.925 percent, introduction of the CAT (a 0.26 percent tax on gross receipts), and reduction in the property tax on business tangible personal property. The CAT was intended to replace the tax on a number of the business taxes, including the franchise and personal property taxes. The changes have resulted in a lower role for personal income taxes, a business tax increase through the CAT, and a decrease in taxes relative to the economy.

Several of the states, including Georgia and North Carolina, either had a tax commission or are considering having a tax commission, but none of the states have enacted policy change based on recommendations of a tax commission since 2007. A number of other changes have taken place across competitor states, with most of them being rate changes. Illinois temporarily increased the marginal individual income tax rate from 3 percent to 5 percent for four years beginning in 2011 and the corporate income tax rate from 4.8 to 7.0 percent for four years. Illinois also conformed the state corporate income tax to the federal tax code which resulted in an estimated \$600 million loss in tax revenues. West Virginia also brought income taxes into conformity with IRS code. North Carolina temporarily allowed a 1 percent sales tax rate increase and imposed an income tax surcharge and then allowed both to expire. South Carolina (eliminated the sales tax on food), Tennessee and West Virginia continued to phase down the sales tax rate on food for consumption at home. Tennessee also began a phase out of the estate and inheritance tax by increasing the exemption and Virginia eliminated its estates tax. Several states, including Illinois, enacted tax amnesties. At least four states, including Indiana, Mississippi, South Carolina and Tennessee, raised their tobacco tax rates. Small expansions in the sales tax base occurred in several states. For example, Illinois added coffee, candy tea and grooming and hygiene products. Ohio (new casinos) and Indiana (slot machines at pari-mutuel horse racetracks) also enacted new or expanded taxes on gambling. Alabama and Georgia made no significant tax structure changes in recent years.

8.2 Prior Tax Reform Initiatives

Table 8.1 provides a chronological list of previous studies of the Kentucky state tax system with reference to the sponsoring agency and when completed by an independent consultant, the consulting agency or individual.⁵⁵

⁵⁴Health care or hospital assessments and unemployment insurance are not discussed here.

⁵⁵ This and the following sections rely heavily on Greg Harkenrider, "Prior Tax Reform Initiatives," Presentation to the Governor's Blue Ribbon Commission on Tax Reform, April 2012.

Table 8.1: Summary of Previous Studies of Tax Reform

Date	Title	Sponsoring Agency/Body or Consultant
November 1982	A Proposal to Reform and Simplify the Kentucky Tax System (A Flat Rate Individual Income Tax and a Corporate Business Activity Tax to Replace Eight Existing Taxes)	Revenue Cabinet
April 1983	A Proposal to Reform and Simplify the Kentucky Individual Income Tax System	Revenue Cabinet
February 1990	Governor Wilkinson's Revenue Revitalization Program: Questions and Answer	Finance and Administration Cabinet
November 1995	A Blueprint for Comprehensive Reform	Kentucky Commission on Tax Policy
December 1999	A Comparative Analysis of Kentucky's Tax Structure	Barents Group
December 2001	Financing State and Local Government: Future Challenges and Opportunities	Kentucky Long-Term Policy Research Center
February 2002	Report to the Sub-Committee on Tax Policy Issues	State Legislature/William F. Fox
January 2003	Securing Kentucky's Future	Patton Administration
November 2004	Kentucky's Economic Competitiveness: A Call for Modernization of the State's Fiscal Policies	Paul Coomes
January 2005	Governor Fletcher's Jobs and Opportunity Bipartisan Solutions (JOBS) for Kentucky	State Budget Director's Office
June 2006	Final Report of the Task Force on Local Taxation, House Bill 272	Legislative Research Commission

Source: Greg Harkenrider, "Prior Tax Reform Initiatives," Presentation to the Governor's Blue Ribbon Commission on Tax Reform, April 2012.

A summary of some of recommendations made in these studies and the legislative impact is found in *Table 8.2*.

Table 8.2: Recommendations of Previous Tax Reform Studies

Recommendation/Option	Recommending Study	Legislative Impact
Income Tax Recommendations		
Adopt Federal AGI as starting point for computing the Kentucky tax base and add or subtract specific items to obtain Kentucky taxable income	All studies	Kentucky adopted federal AGA with additions and subtractions
Update to Internal Revenue Code (IRC), eliminate the federal tax deduction, and implement a low income tax credit	Wilkinson Proposal	IRC updated to December 31, 2006, federal tax deduction is eliminated, the low income tax credit implemented
Adopt federal filing status	Commission on Tax Policy	No Action
Adopt federal standard deduction, personal exemptions, and eliminate low income credit	Commission on Tax Policy	No Action
Reduce or eliminate the individual income tax	Paul Coomes	An additional bracket at 5.8% is added; top rate remains at 6%
Increase lowest bracket of the low income credit to exclude from tax person whose income is at or below \$12,000 and adjust other brackets	JOBS for Kentucky	Expanded and modified based on family size
Reduce the top rate of tax to 5.68%	JOBS for Kentucky	None
Sales and Use Tax Recommendations		
Impose tax on unbundled natural gas transactions and dot.com affiliates of Kentucky retailers	Governor Patton Administration	Implemented
Join Streamlined Sales and Use Tax Initiative	Governor Patton Administration	Implemented
Limit vendor compensation at \$1,500 per reporting period	Governor Patton Administration	Implemented
Raise the tax rate to 7%, legalize Video Lottery Terminals, then roll-back the sales tax to 6% after 2 years	Governor Patton Administration	No Action
Eliminate the tax on switch access fees paid by communications companies	Governor Patton Administration	Implemented
Assess sales tax on DBS services at a 7% rate	Governor Patton Administration	Implemented (2005)

Table 8.2 (Continue)

Recommendation/Option	Recommending Study	Legislative Impact
Excise Tax		
Increase tax on cigarettes	Report to Sub-Committee on Tax Policy (Fox) Securing Kentucky's Future Solving Kentucky's Fiscal Crisis JOBS	Implemented
Impose or raise tax on other tobacco products	Report to Sub-Committee on Tax Policy (Fox) Securing Kentucky's Future Solving Kentucky's Fiscal Crisis JOBS	Implemented
Property Taxes		
Freeze the state rate on Real Property	Report to Sub-Committee on Tax Policy (Fox) Securing Kentucky's Future Solving Kentucky's Fiscal Crisis	No Action
Calculate the state real property tax limit by excluding new property before the 4% limit is imposed	Report to Sub-Committee on Tax Policy (Fox) JOBS	No Action
Eliminate of Personal Property Taxes	Report to Sub-Committee on Tax Policy (Fox) Securing Kentucky's Future Solving Kentucky's Fiscal Crisis	No Actions
Eliminate Property Taxes on Intangible Property	Securing Kentucky's Future Solving Kentucky's Fiscal Crisis JOBS	

Source: Greg Harkenrider, "Prior Tax Reform Initiatives," Presentation to the Governor's Blue Ribbon Commission on Tax Reform, April 2012.

8.3 The Evolution of the Kentucky Individual Income and General Sales Tax

8.3.1 The Individual Income Tax

The Kentucky individual income tax was passed and became law in 1936. It had a graduate scale with rates ranging from 2% to 5% for incomes of \$5,000 and beyond. In 1950 the higher marginal rate was increased to 6% for incomes of \$8,000 and above. This rate did not change until 2005 when the rate decreases to 5.8% for incomes between \$8,000 and \$75,000.

8.3.2 The General Sales Tax

The general sales tax was imposed in 1960 with a rate of 3%. Base narrowing began in 1966 with food and prescriptions eliminated in 1972. The rate increased to 5% in 1968 and 6% in 1990.

9. *Options for Tax Reform*

Our review of the Kentucky's current tax system has focused, as we were charged, on the adequacy, elasticity, fairness, competitiveness, and simplicity and compliance of the system. This review identified a number of potential concerns with our current system touching on all of these issues as well as inefficiencies associated with the current system.

Here we do not attempt to identify or recommend any one reform package. Instead, we offer a number of options for reform. We have several reasons for refraining from forwarding any single plan. First, as we have made clear in our earlier discussion, we can effectively describe how to think about adequacy or fairness but the decision on whether the tax system is adequate or fair is in the eye of the beholder. On these issues, we have merely tried to convey information to the Commission that we feel will be valuable to assist them in addressing issues of fairness and adequacy.

Second, by providing a number of options we feel that the Commission gets a better idea of some the alternatives and possibilities that might be consider, perhaps some of our options, or perhaps options they develop based on some options we may have suggested.

Finally a single plan should be a politically viable plan. As we are not politicians nor have we been charged to write actual legislation, some of the options we have proposed may be less politically viable than others. This is something that would be difficult for us to judge and not something we want to attempt. However, while the options we suggest have not been screened through a political filter, it is worth noting that every option we propose is one being done by at least one of our competitor states.

Given that we offer a number of options for a number of different tax instruments, are there any broad themes that emerge from these options? We believe that both the examination and the development of our options suggest two themes: options that broaden the tax or shift taxation from labor and capital to consumption. Many of the options effectively do both.

A Broader Tax Base

While we discuss the benefits and costs of each option in more detail later, a broadening a tax base addresses a number of concerns:

- a broader tax base will generally be more elastic;
- a broader tax base will allow for lower tax rates, significantly reducing the inefficiencies associate with taxes;
- a broader tax base will generally reduce differences in tax treatment of households or firms in similar economic conditions;

and

- a broader tax base may simplify tax reporting and increase compliance.

A Shift from the Taxation of Labor and Capital to Consumption

As discussed in *Section 4*, while taxes may be collected from businesses, only people, not businesses pay taxes. Taxes on businesses may be shifted forward to the consumer of their products in the form of higher prices; back to labor in the form lower wages; or to the owners of capital in terms of a lower rate of return on their investment. While it is tempting to think taxes on Kentucky businesses are exported to out-of-state consumers of Kentucky goods or out-of-state investors, we should be skeptical to the extent this is possible. Competitive markets will require that Kentucky goods will need to sell at the prices of goods produced elsewhere and investors can search the world for investment opportunities. Thus it is most likely that taxes on Kentucky businesses will stay in Kentucky and most likely reducing labor earnings and the return on capital in Kentucky.

The advantages of more reliance on taxation of consumption and less on business capital and labor earnings include:

- increase Kentucky's competitive position and employments for employment in Kentucky by making it more attractive for firms to locate and invest in Kentucky;
- reduce compliance costs for firms engaged in business in Kentucky

Each of these options has been scored with the assistance of the Commonwealth of Kentucky Governor's Office for Economic Analysis and the Department of Revenue -- meaning that the impact of the option on revenue is estimated given other current tax policies including tax rates. While our base-broadening options are associated with a revenue increase it is important to understand that we are not suggesting that these options are the only ones that should be considered if revenue is to be increased or that revenue should be increased. Gains to the economy will occur if these adoptions are adopted and rates, then, can be reduced so as to maintain revenues at the desired level.

While many of the options for reform of a tax are mutually exclusive the effectiveness and desirability of many of the options will depend on what other options are adopted. It is worth noting that while some of these are unique and perhaps even radical options for Kentucky, each of the options is a tax policy in at least one of Kentucky's competitor states.

The ordering of the options is not intended to represent any ranking or recommendation. Instead, we begin with options for the largest source of revenue for the state, the individual income tax, and then order each of the taxes based on its share of revenue. The options for each of the tax are generally ordered based on what the magnitude of the change in the tax, from minor reforms to the existing structure to sometimes an extremely different structure. In the remainder of this section we outline the specifics of our tax reform options.

9.1 Individual Income Tax Options

The individual income tax is a major source of state revenue in Kentucky and provides a mechanism to alter the distribution of tax payments among Kentucky's residents. For both these reasons and others it is important to have an income tax that is efficient, transparent, and fair.

9.1.1 Concerns about and Issues regarding the Individual Income Tax

Before discussing options for the individual income tax, a few potential concerns with Kentucky's current tax, discussed at length in earlier sections, are worth restating:

- **The individual income tax is complex with high compliance costs.** There is no specific study of which we are aware on Kentucky's individual income tax but some of studies on the U.S. federal income tax reviewed in *Section 6*, the costs of compliance are likely to be high. Compliance costs, the time and effort to complete the form, primarily arise from efforts to determine and allocate taxable income and to determine itemized deductions. To the extent our code conforms with federal code, these costs are reduced. However, our very low standard deduction (\$2,240) increases both the number of households filing taxes and itemizing deductions, both of which increase compliance costs.
- **Income tax burdens for low-income households are higher than in competitor states.** How much this should be a concern probably depends on views of what, in terms of vertical equity, is a fair distribution of the income tax burden. The issue is not for the lowest income households but for those with taxable incomes in the range of \$20,000 - \$30,000. Given the low standard deduction, small exemptions (in form of tax credits) and the minimal amount of income subject to low marginal tax rates (5.8% MTR starts at \$8,000) lower income households in Kentucky, relative to the competitor states, can pay a relatively significant share of their income in taxes. It should be noted that for the lowest income households (\$10,000 or less), Kentucky's income taxes are as low as or lower than its competitor states but at \$25,000 they are an additional 1.5% of income. The low tax burden on the lowest income households is probably attributable in large part to the *Family Size Tax Credit*.
- **The high marginal and average tax rates reduce competitiveness.** As shown in *Section 4*, with the exception of the lowest income brackets, individual income taxes are higher than the competitor states by 1% – 2 % of income. This is a particular concern along Kentucky's borders where much of economic activity is located and given that several states have significantly lower income tax burdens (Ohio, Indiana, and Tennessee). For states with reciprocity, it is possible for households employed in Kentucky to reside in Indiana or Ohio and pay Indiana and Ohio taxes. Coomes and Hoyt (2008) and Hoyt (2011) find evidence of this occurring. More generally, the voluminous literature on taxes and business activity reviewed as in *Section 5* suggests taxes on individuals and not just business taxes will adversely affect business activity.
- **Differential treatment of income and itemized deductions.** Income tax liabilities among households with similar incomes can differ for a number of reasons but two of the major reasons are differences in the treatment of income and differences in the amount of itemized deductions. Some differences in tax treatment arise because of the distinction between realized and unrealized increases in net worth and deferred income. The federal code does not include compensation in these forms when the income is received but taxes it when it is realized. In Kentucky, some pensions and retirement savings vehicles such as 401K are not taxed upon either receipt or realization.

Itemized deductions, with the one of greatest magnitude being the mortgage interest deduction, may also result in households in similar economic circumstances paying substantially different

state income taxes based on consumption choices. Thus, homeowners will pay less in taxes than households renting who are otherwise identical for tax purposes.

- **Income taxation results in economic inefficiencies by distorting labor incentives and consumption choices.** Of course, all taxes result in some form and level of inefficiency making the issue not whether a tax is inefficient but how inefficient. The inefficiencies or distortions in behavior most associated with the individual income tax are labor disincentives and distortions in consumption choices. For state income taxation an additional concern is how the tax changes household locational decisions, that is, how it influences where a household will choose to live. While the marginal tax rates for state income taxes, including Kentucky's, are low when compared to the federal rates, these rates are in addition to the federal rate. As discussed in *Section 1*, increases in rates are much more distortionary the higher the rate – thus the distortion from a rate of 6% in addition to a 31% federal marginal tax rate is much more distortionary than a 6% rate alone.

We suggested that itemized deductions might lead to horizontal inequities. They also effectively subsidize the consumption of the deductible expenditures. Thus housing consumption is subsidized because of the deductibility of the mortgage interest, making the cost to the taxpayer of housing less than its actual cost. The largest tax expenditure is not the mortgage interest deduction but employer contributions for medical insurance and medical care. This is a subsidy on health insurance, which many might argue is very desirable. However, it is also a subsidy on elective procedures that are covered as well as routine and predictable services.

- **Income Tax Revenue is not keeping pace with personal income.** As discussed in *Section 3*, the revenue elasticity of the income tax was estimated to be 0.82 between 2000 and 2008. In other words, a 10% increase in personal income will only increase individual income tax revenues by 8.2%. If the desired level of expenditures is considered to be a relatively constant share of personal income, revenue collections need to be as well. This is not the case for revenue from the individual income tax.

9.1.2 Options for Reforming the Individual Income Tax

How might at least some of the issues regarding the individual income tax be addressed by some reforms to it? Here we offer a number of alternative options, some of which are mutually exclusive and some of which can be jointly undertaken. The detail to which we outline these options varies among options and all can be modified. Broadly, most of the options we propose broaden the tax base.

Broadening the income tax base addresses several concerns about the income tax and Kentucky tax system. First, the broader the base for any tax, the lower the rate needed to raise a given amount of revenue. As we discussed in *Section 1*, the inefficiency associated with a tax increases dramatically with the tax rate. Given the rather high marginal tax rates on earnings already imposed in Kentucky we believe this is an important consideration. Second, a broader tax base that includes more income is likely to be more elastic. Broadening the tax base, at least as we propose, will also result in households with similar incomes having less potential variation in their tax burdens than they do under the current system. Finally, a broader tax base provides fewer opportunities for taxpayers' to

engage in behavior and make economic choices based on their tax consequences – behavior that is generally inefficient and makes compliance more costly.

Our purpose in offering them is not to provide a detailed plan but to provide an idea of the general nature of reforms that address the concerns about the tax system that the Committee has been charged to address.

Individual Income Tax Option 1: Conform the Kentucky individual code with the federal code

Specifically, the Kentucky code should adopt the federal definition of adjusted gross income (AGI). Itemized deductions should be patterned on federal deductions with the exception that they not include state taxes. This option will reduce complexity and increase compliance. In addition, as the federal definition of AGI is broader than the Kentucky definition. To ensure that Kentucky is not limited in determination of its own policies, it should adopt the federal code of a specific date and reconsider, when necessary, adopting federal code when it changes.

Initially this option would reduce revenue by \$9.0 million annually but this would be reduced over time.

Individual Income Tax Option 2: A State Earned Income Tax Credit (EITC)

If the Commission wants to consider reducing the burden on lower income households, a *State Earned Income Tax Credit (EITC)* is one option. The *EITC*, unlike welfare and other means-test transfer programs should not adversely affect taxpayer behavior, in this case the incentives to work. While Kentucky could devise their own plan, we recommend that they follow the examples of Illinois and Indiana and “piggyback” on the federal *EITC* by offering a refundable credit that is a percentage of the federal *EITC*. A credit that is 6% of the federal credit would provide a maximum tax credit of about \$300 for a single or married household with two children.

We believe that one advantage of a *EITC* over increasing welfare benefits or other transfers is that given that the *EITC* requires employment, cross-border migration to receive the *EITC* is likely to be very minimal. The same cannot be said for welfare benefits and other state aid to low income households.⁵⁶

While there are concerns about the complexity added by the *EITC* (the *EITC* discussion in the 2011 IRS 1040 instructions is 28 pages) it should be noted that all the complications are added by completion of the federal *EITC*. As the option is to “piggyback” the state *EITC* is a simple percentage of the federal *EITC* and would one line to the form.

Finally, it should be noted that this option, like the others, should be considered in conjunction with other options. The *EITC* might be a particularly attractive option if expansions to the general sales tax, particularly the taxation of in-home food, are adopted that increase the regressivity of that tax.

⁵⁶Terra McKinnish. “Importing the Poor: Welfare Magnetism and Cross-Border Migration,” *Journal of Human Resources*, (2005) provides evidence on this migration by examining how cross-state differences in the generosity of welfare benefits affects welfare payments in border counties.

Based calculations from the Governor's Office of Economic Analysis the estimated cost of an *EITC* that is 5% of the federal *EITC* would be \$45 million in 2012.

Individual Income Tax Option 3: Increase the tax on pension and other retirement income

As discussed in our overview of both Kentucky and its competitor states' tax systems, six of our competitor states offer only minimal exemptions of pensions from taxable income. Exempting public and private pensions as well as *IRA* income is estimated by the Governor's Office for Economic Analysis to result in a loss in \$145 million in tax revenue.⁵⁷

This policy would be a dramatic change from the current exemption of \$41,110 per pension recipient and would result in a tremendous increase in revenues, almost a third of current income tax collections, as well as significant changes in tax liabilities for those receiving pensions and other retirement income. A more moderate approach, along the lines of some of competitor states that offer exemptions on the order of \$10,000 - \$12,000 would reduce the impact of these changes on all households who receive retirement income, particularly those with the lowest incomes.

What concerns about the tax system would this change address? Some might argue that exemption of pension and other retirement income from taxation while taxing earnings is unfairly treating younger, working households who might have much higher expenses. Taxing income in retirement is likely to have less of an impact on labor incentives than higher taxes on earnings or incentives of firms to locate in the state. Some might argue that such a policy might make Kentucky a less attractive spot for retirees to live but economic research on the issue of how taxes influence locational decisions of the elderly suggests that state taxes only have limited influence on locational decisions.⁵⁸ More relevant might be concerns about the migration of the employed and the firms that employ them if revenue is collected from an alternative tax on businesses or their workers. Finally, with baby-boomers beginning to retire and therefore pensions and retirement income forming a large share of Kentucky personal income, broadening the tax base to include pension income will likely increase the elasticity of the tax base.

Individual Income Tax Option 4: Make Taxable Income equal to Federal Adjusted Gross Income (AGI) less a large standard deduction and tax credit for low-income households

While this might seem to be our most radical option for the individual income tax, in fact it is done by 10 states including Indiana, Illinois, and Ohio. This option would include pension income as taxable income as it is taxed by the federal government. It would also exclude numerous deductions and exemptions used to reduce taxable income. This modification would dramatically simplify the individual income tax. In fact, the tax could be done on a "postcard" given that households have already determined federal AGI when doing federal taxes.

⁵⁷See "Tax Expenditure Analysis: Fiscal Years 2012 – 2104," Governor's Office of Economic Analysis, Office of State Budget Director, Commonwealth of Kentucky (November 2011) p. 15.

⁵⁸See Karen Smith Conway and Jonathan C. Rork. "State Death Taxes and Elderly Migration," *National Tax Journal* (March 2006), Karen Smith Conway and Andrew J. Houtenville. "Do the Elderly 'Vote with Their Feet'? " *Public Choice* (December, 1998), Karen Smith Conway and Andrew J. Houtenville. "Out with the Old, In with the Old: A Closer Look at Younger versus Older Elderly Migration." *Social Science Quarterly* (June, 2003) and Donald Bruce, William Fox, and Zhou Yang, "Base Mobility and State Personal Income Taxes," *National Tax Journal* (December 2010).

Broadening the base this dramatically would allow for significant decreases in marginal tax rates or expansions of the standard deduction. The simplest plan would be a combination of a single tax rate and a standard deduction. While Kentucky has six tax brackets, four of these brackets occur for taxable incomes of less than \$8,000 and only collect \$278 on the \$8,000 essentially making for a phased-in standard deduction. The two brackets beyond \$8,000 only differ by 0.2%. Thus, effectively, we have a standard deduction of approximately \$10,000 and a single rate of approximately 6%. A single tax rate and larger standard deduction would accomplish the same objectives and be simpler.

For any revenue objective, the larger the standard deduction, the higher the marginal tax rate needs to be. Based on the current distribution of taxpayers in Kentucky, *Table 9.2* lists some possible combinations of standard deduction and marginal tax rates and the revenue. The progressivity of this tax, as measured by average tax rate, depends on the magnitude of the standard deduction – the larger the standard deduction the more progressive the tax is.

Of course, modifications to this option are certainly possible. One modification that does not add complication is to have multiple tax brackets with higher marginal tax rates at higher income levels. There is no increase in complexity because households would refer to a table (or have their taxes calculated for them). An alternative that has the same economic impact as increasing the marginal tax rate is to phase out the deduction, a characteristic of the Ohio code. Of course, a concern with the current Kentucky tax code is the high marginal tax rate (6%) for taxable income above \$75,000 that combined with local income (occupational license) taxes make effective marginal tax rates above 8% in many localities in the state, including our major metropolitan areas.

Other modifications are possible as well including allowing some of the itemized deductions. This would significantly increase complexity and alter the simple relationship between a household's adjusted gross income and what it pays in taxes. Allowing, for example, the mortgage interest deduction will now mean that the taxes a household pay not only depends on its income but also whether and how much a mortgage it has.

Increasing complexity is only one of the costs of allowing itemized deduction. Another cost is how itemized deductions distort relative prices, effectively subsidizing some goods. This is particularly important for housing as the price of owner-occupied housing is effectively reduced through the deductibility of mortgage interest. This distortion, as suggested by numerous economic studies, leads to more households choosing owner-occupied housing than rental and purchasing more owner-occupied housing than they would have in the absence of this favorable tax treatment.⁵⁹ Allowing the deduction of local taxes reduces the price of tax-financed publicly-provided goods and services relative to private goods and services.⁶⁰ This might lead to higher taxes and local government expenditures than would occur in the absence of the deductibility of these taxes.

⁵⁹See, for example, William Hoyt and Stuart Rosenthal, "Housing Demand, Capital Gains, and Tax Reform," *Journal of Urban Economics*, 1992 ; James Poterba. "Tax Subsidies to Owner-Occupied Housing: An Asset-Market Approach," *Quarterly Journal of Economics*, 1984; and Harvey Rosen. "Housing Decisions and the U.S. Income Tax," *Journal of Public Economics*, 1979.

⁶⁰While there have not been studies that have attempted to estimate how the deductibility of local taxes in state income tax calculations, see Harvey Rosen and Douglas Holtz-Eakin. "Federal Deductibility and Local Property Tax Rates," *Journal of Urban Economics* (May 1990) as an example of how federal income tax deductibility affects local revenues.

Finally, elimination of itemized deductions should reduce the regressivity of the state income tax. Higher income households are much more likely to itemize and have much greater itemized deductions. It should also reduce differences in taxes among households with very similar incomes but who make different consumption choices (housing, charitable contributions).

While, as we suggest, there are a number of ways in which the tax could be structured if we were to have a single 6% tax with the current system of tax credits, revenues would increase by \$780 million. Alternatively, the rate could be reduced to approximately 4% without affecting revenues.

9.2 *Sales Tax Options*

Sales tax options are focused on potential changes in the tax base. This section generally argues that the sales tax base should be expanded to more consumer purchases and fewer business purchases.

Taxing Consumer purchases

Distortions arise because the sales tax is imposed on a narrow set of consumer purchases. Many services, prescription and some non-prescription drugs, and food for consumption at home are examples. Key effects include encouraging consumers to buy untaxed goods and services versus taxed ones and altering where people shop. Thus, granting exemptions (or not) can potentially affect decisions to purchase taxed items relative to untaxed items and to purchase items in Kentucky versus remotely. One important issue is who pays the tax—that is, are sales taxes ultimately paid by consumers through higher prices or are they borne by other possible groups—such as business owners, workers, or landowners—through lower earnings. Presumably, the sales tax should have larger effects on consumer behavior if it is borne by consumers rather than borne by others, such as business owners.

As discussed in *Section 4*, the limited evidence on the incidence of state sales taxes suggested it is shifted forward to consumers. The conclusion that consumers pay the sales tax, however, is reached for a series of standard consumer items that are likely to be purchased locally and does not necessarily apply to goods or services that can be purchased easily across state lines. The higher gross of price tax paid by consumers could cause them to shop more out of state or to buy more untaxed items and lessen the ability to pass the tax forward to consumers.

The sales tax can affect consumer behavior in two key ways, given that consumers bear the tax on local purchases. First, sales taxes can change what consumers buy since the relative price of exempt items is lower than for taxable items. The effects on behavior and tax revenues depend on how responsive consumers are to the price of the exempt versus the taxable goods. Merriman and Skidmore (2000) indirectly investigate this question as they studied how the sales tax rate has affected the allocation of expenditures between retail activity and service activity between 1982 and 1992. This is a reasonable test of the effect that sales taxes have on exempt versus non-exempt purchases since many services are exempt in most states and many goods are taxable in most states. Merriman and Skidmore find evidence that the share of the economy in the retail sector fell, and the share in the service sector rose in high sales tax rate states. This suggests, as would be expected, that sales taxes alter consumption behavior by increasing the quantity demanded for exempt items compared with taxable items. Thus, Kentucky's exemptions can be expected to shift the amount of purchases, at least to some extent.

Russo (2005) also studied the effects of having a broad based versus narrow based sales tax on economic activity. He finds no relationship between the size of the state's economy and the breadth of the base, but a broader base results in a small improvement in the overall wellbeing in the state. The broader base increases wellbeing by permitting a lower tax rate (which lessens incentives to buy those remaining exempt items) and by allowing for a relatively small set of exempt items. Kentucky's narrow base suggests it stands to gain considerably from base broadening. It should be noted that Russo observes an even larger gain for states when they combine taxing all consumption with eliminating taxation of business inputs.

Second, sales taxes can change where consumers choose to make purchases. Consumers can purchase online, via mail order, or travel to other states. In some cases the remote vendor collects the tax for Kentucky and the tax does not alter where purchases are made. But, Kentucky residents and businesses have a tax incentive to look for the vendors that do not collect sales tax for the state.⁶¹ The use tax is owed when items are purchased remotely for use in Kentucky, but compliance with the use tax is very poor, particularly for individuals.

Research suggests that the sales tax alters where people shop. For example, Goolsbee (2000) examined the effects of sales taxes on Internet shoppers and found that higher sales tax rates increased the incentive to shop online. His analysis relied on 1997 data, which was early in the e-commerce buying age, making the results less applicable than if a more recent study were available. Nonetheless, he demonstrates that efforts to evade the tax were a significant factor in people shopping online. Also, research has been conducted on the effects that tax differentials along state borders have on where people shop, though much of the work is getting old. The research generally finds that people respond to tax differentials by doing relatively more of their shopping on the low tax side of the border. Each study concludes that high tax rates have a large effect on shifting consumers to the other side of the state border (see Fox (1986) and Walsh and Jones (1988) for examples).

Russo (2005) also examined effects of extending the sales tax to Internet sales. He finds that state economies would be slightly larger and the level of wellbeing higher if all Internet sales could be taxed. Presumably this is because the incentives to avoid the tax by purchasing out of state via the Internet are eliminated. The result is also consistent with the conclusion that a lower sales tax rate is better for the state's economy because it reduces the incentive to buy outside the state.

Taxing all consumption would be the best policy (at least from an economic efficiency perspective) if not for the administration and compliance costs of collecting the revenues, particularly on purchases from out-of-state. Taxes can be collected most effectively on Kentucky firms which can place them at a competitive disadvantage for items easily sold remotely. Thus, care must be exercised in choosing what consumption to tax.

Sales Tax Option 1: Broaden sales taxes to selected services

Four rules should guide which services should be considered for taxation:

- The services should be primarily consumed by households.
- Kentucky service producers are not adversely affected in their ability to produce for Kentucky (or out-of-state) consumers.

⁶¹Based on the U.S. Supreme Court ruling in *Quill, Inc. v. North Dakota*, firms can only be required to collect the tax in states where they have physical presence. Firms can choose to voluntarily collect and remit the tax for states.

- The services compete directly with other taxed goods or services.
- Administration and compliance costs are not prohibitively high. These costs are likely to be much lower when applying the tax to goods and services sold by operations already collecting the sales tax on other goods and services they provide.

Following these guidelines, *Table 9.1* provides a summary of estimated revenue obtained from taxing additional personal services, non-commercial automotive repair and services, residential and consumer repair services, and amusements and recreational services at the general sales tax rate of 6%. A more detailed description of these services is found in *Table A.9.1* in the *Appendix*.

While the estimates found in *Table 9.1* suggest a significant increase in revenue arising from taxation of these services, we wish to emphasize that these are only estimates and may, in fact, be too high or too low. However, they should serve to give an indication of the potential magnitude of revenue obtainable from taxing these services. Of course, broadening the tax base also provides the opportunity to reduce tax rates if desired. The \$176 million represents about 6% of the current 2.9 billion on sales tax revenue collected in Kentucky.

Table 9.1: Services Considered for Taxation and Estimated Revenue, by Category (\$2012 Millions)

Category	Tax Revenue (\$Million)
Personal Services	\$ 70.12
Non-Commercial Automotive Repair and Services	\$ 65.85
Other Residential and Consumer Repair Services	\$ 5.45
Amusements and Recreational Services	\$ 34.99
Total	\$ 176.41

Source: Authors' calculations based on Governor's Office for Economic Analysis and 2007 Economic Census, Census Bureau, Department of Commerce.

Sales Tax Option 2: Impose a state gross receipts tax of up to 3 percent on providers of electricity for residential use

Residential electricity is exempt from the state sales tax in many states including Kentucky though Kentucky allows the imposition of a utility tax of 3% by local school districts. Imposition of a 3% state gross receipts tax combined with the 3% tax imposed by the vast majority of school districts would make an effective 6% rate, the same as the state sales tax rate. The state tax would presumably be a gross receipts tax (at least in part because the SSTP does not permit multiple tax rates) though it would have the same economic effect as a sales tax. Approximately 16 states tax residential electricity (including Illinois and Indiana), though in some cases under a special utility tax.⁶² Residential electricity meets the criteria identified above for services that should be taxed. The tax could be legislated in ways that do not create substantial concerns about vertical equity, and specifically taxation of lower income households. Electricity consumption is likely correlated with income so the burden should rise with income. Also, a small adjustment could be made in the income tax to offset any additional sales tax burden on lower income individuals (such as a

⁶² See Federation of Tax Administrators at <http://www.taxadmin.org/fta/pub/services/services.html>.

refundable credit for the tax implicit in electricity purchases by low income households), if there are further concerns about vertical equity.

The estimated increase in revenues from imposing a state gross receipts tax of up to 3 percent on residential users of is \$360 million.

Sales Tax Option 3: Impose the sales tax on food for consumption at home and provide a tax credit or other means for to offset the additional tax burden for low-income households

The intent of this option is to indicate clearly that consumer goods should be taxed broadly, and mechanisms other than exempting wide categories of goods should be used to achieve vertical equity and other goals. Thirty states exempt food for consumption at home and other states, including North Carolina and Tennessee, tax food at a preferred rate. Food is representative of ongoing efforts in states to exempt consumer goods for a range of different reasons. Tax holidays and clothing are other exemptions that appear to be growing across the states. We believe that Kentucky's economy will work best if a broad set of goods is taxable at low rates.

Vertical equity, and particularly unfairness for lower income consumers is the traditional argument for exempting food. The purchase of food is regressive in consumption, but so are most other purchases (private education is an exception). So, the sales tax remains regressive even if food is exempt. Further, food stamps are exempt in all states, reducing some of the regressivity of taxing food.

Some have argued that the vertical equity goals could be achieved if food is kept in the base but lower income people are provided a smart card with an amount equal to the annual tax on food or if a credit is provided against the income tax. Alternative options to counteract the additional regressivity imposed by a tax on food include the use of an Earned Income Tax Credit (*EITC*), significant expansion of the standard deduction in the individual income tax code, or increases in the Family Size Tax Credit.

Based on the Governor's Office of Economic Analysis estimate tax expenditure associate with omitted food purchases, a tax on all food for consumption at home would increase tax revenue by \$484 million in 2012, or the sales tax rate could be lowered significantly.⁶³

9.2.1 Taxation of Business Inputs

Economists almost uniformly oppose taxes on business-to-business transactions and argue on conceptual grounds that all business inputs should be exempt. Current taxation of business inputs occurs for two reasons.⁶⁴ Political advantages may result because taxing business inputs allows the sales tax rate to be lower and hides much of the sales tax burden in product prices.

Also, a blanket exemption for all business purchases could lead to widespread evasion as people form businesses (or use existing businesses) so they can purchase items without paying the sales tax.

⁶³From "Tax Expenditure Analysis," Governor's Office for Economic Analysis, Office of State Budget Director, Commonwealth of Kentucky (November 2012).

⁶⁴ Also, business input purchases should be taxable in cases where the final sales to consumers are exempt. Tax on the inputs is intended as an indirect, though limited, means of taxing the final output. This explanation particularly fits inputs used in the production of non-taxable services.

This argument suggests that states probably cannot exempt all business purchases, and must carefully select the set of exemptions. Still, a strong case can be made to lessen taxation of business inputs. One reason is that the sales tax is intended as a tax on consumption, but businesses do not consume, they produce.⁶⁵ It is reasonable to presume that everything businesses purchase is necessary to produce and sell their product (regardless of whether the firm is a manufacturer, wholesaler, or retailer) and does not fit within the conceptual framework of a tax on consumption.

The other reason to exempt business purchases is that taxes on business inputs have the potential to alter business behavior and to harm the state's economy. First, taxing business-to-business transactions can change the way that businesses operate as firms seek to limit the amount of tax they pay.⁶⁶ Firms can substitute non-taxable inputs for taxable ones, to the extent that taxability differs and input substitution is possible. Alternatively, firms can vertically integrate and bring more production within a single company. For example, a firm can hire its own accountants and lawyers to avoid a tax on hiring the service from outside. Firms should be less profitable to the extent that taxes alter the way that business is done, since firms would bring the lawyers and accountants into the firm without the tax, if this were generally the lowest cost way to operate.⁶⁷ No evidence exists on the extent to which firms vertically integrate to lessen their tax burdens, but the largest responses would be expected from big firms, which are in the best position to vertically integrate. Not only are smaller businesses less able to vertically integrate but also they are probably less profitable as larger companies outsource less in response to taxation on transactions between firms.

Second, input taxes raise the cost of producing in Kentucky, which can cause some firms to locate their production in states that impose lower tax burdens on business transactions. No empirical research directly examines the extent to which taxes on business inputs harm a state's economy, though some research considers whether higher sales taxes (measured by the tax rate) generally harm a state's economy. For example, Bruce, Deskins, and Fox (2007) find that Gross State Product falls as states increase their sales tax rates. They argue that the effects of taxes on location are growing because technology makes it increasingly easy for firms to geographically separate their production from their markets.

No research directly examines the issue of whether firms move their production activity in response to decisions by states to broaden or narrow their tax bases to include various business-to-business transactions or to tax these transactions at higher rates. Still, it is reasonable to presume that bigger taxes on business purchases reduce the propensity for firms to locate or produce in a state. Further, these effects are likely largest for those firms purchasing the greatest amount of taxable inputs and those firms that can most easily separate their point of production and their markets (such as many firms producing for national or international markets). Thus, the effects are likely to vary across industries and sizes of firms.

Third, taxation of business purchases cascades into higher taxes on the final product. The extent of cascading depends on the complexity of the production process (how many levels of production a good or service goes through), the tax treatment of the various business transactions, and the propensity to vertically integrate in the industry. As a result, the amount of cascading can vary

⁶⁵ This statement ignores any propensity to use a company to make purchases of goods that are intended for personal consumption. This can be a form of tax evasion that is intended to lower sales and income tax liabilities, and does not represent the firm operating as a business and producing.

⁶⁶ The gross receipts tax discussed above can create the same distortions, but the effects are likely to be small if the rate is kept under 1.0 percent versus the 6.0 percent for the sales tax.

⁶⁷Of course, vertical integration is the best business model for some activities in some firms even without the encouragement from taxes.

significantly across economic sectors. Assuming that business purchases of capital equipment, communications equipment, utilities, and office supplies are taxable, Hawkins (2002) finds that the sales tax is imposed on inputs equal to 14.7 percent of the revenues of electric producers, 11.2 percent for firms taking fees and admissions, and 11.5 percent for firms providing non-shelter lodging. The cascading can have important economic effects as it raises the relative price of some goods and causes people to purchase less of these goods. Hawkins finds that the loss in wellbeing in a state as a result of differential effective tax rates because of cascading is small in states with broad based taxes, and the losses are much larger if states adopt narrow tax bases.⁶⁸ This conclusion follows because the sales tax distortions, other than from cascading, are smaller for states with broad based sales taxes. While the Hawkins' cascading estimates are for an average state and do not necessarily fit Kentucky, the results suggest the problems from cascading may be greater in Kentucky because of the narrow sales tax base.

Russo (2005) finds that eliminating the tax on business inputs results in a small increase in the size of the state's economy and an improvement in a state's wellbeing, even though the tax rate must be higher.

Sales Tax Option 4: Exempt business purchases of energy

Business purchases of energy should be relatively easy to exempt without allowing consumers to take advantage of the exemption. The exception is people who live and work in their home. The biggest problems of taxing energy are lessened because energy is exempt for the most intensive users, but the advantages described above would still result.

It is estimated by the Department of Revenue that exempting business purchases of energy would reduce revenue collections by \$124 million annually.

Sales Tax Option 5: Impose a gross receipts tax of between 1 and 3 percent on both residential and business electricity.

Sales tax option 5 merges options 2 and 4 into an intermediate step. The revenue impact of this option depends on the tax rate chosen.

9.2.2 Remote Purchases

Kentucky cannot require many e-commerce firms to collect and remit the sales tax because the firms do not have nexus, or taxable presence, in the state.⁶⁹ Bruce, Fox, and Luna (2009) estimate that Kentucky lost – million in 2012 because of inability to collect tax on remote sales. Kentucky's use tax legislation requires buyers to remit the sales tax on their own if the vendor did not remit the tax, but voluntary compliance by individuals is generally believed to be very limited. Voluntary compliance by business purchasers is much better than for individuals, though businesses appear to have much lower compliance with the use tax than with the sales tax.⁷⁰ In the longer term, sales tax compliance can be enhanced significantly if remote vendors are required to collect and remit use

⁶⁸ Effects on a state's wellbeing are measured by changes in the excess burden of the tax.

⁶⁹The U.S. Supreme Court in *Quill, Inc. v. North Dakota* ruled that a state can only require firms with physical presence in the state to collect the sales tax.

⁷⁰ For example, in an audit of registered taxpayers Washington State (2010) found 24 percent non-compliance with the use tax but only 1.7 percent noncompliance with the sales tax.

taxes either because Congress enacts legislation that creates nexus for remote vendors or because the Supreme Court overturns the Quill Case that established sales tax nexus on a physical presence basis. Tax administrators and analysts generally conclude that mandatory collection by vendors significantly improves revenue performance relative to voluntary collection by either buyers or vendors, so the revenue potential is dramatically enhanced by mandatory compliance.

Sales Tax Option 6: Support federal legislation allowing states to require remote firms to collect the sales tax.

States have limited ability to require remote firms to collect the sales tax and Kentucky has taken some important steps including joining the Streamlined Sales Tax and placing a line on the income tax for people to file their use tax returns. But, Congress controls the ability for states to require firms to collect the tax (because the Quill case was decided on an interstate commerce basis, which Congress controls). Three bills to require remote vendors to collect state sales taxes were introduced in the U.S. Congress during 2011: the Main Street Fairness Act,⁷¹ the Marketplace Fairness Act,⁷² and the Marketplace Equity Act of 2011.⁷³ All of the bills allow states that simplify and harmonize their sales taxes to require certain remote vendors to collect their sales tax. Differences between the bills arise mainly in the simplification and harmonization criteria and the small seller exception that determines the sales that a firm must make before it can be required to collect the tax. Much of the current discussion of the legislation focuses on the appropriate small seller exception, and the amount listed in any bill is readily subject to change. But, it is nearly certain that such an exception will be allowed whenever the legislation passes Congress.

Pending review of final legislation, the Department of Revenue estimates and additional \$120 million in revenue from taxation of remote firms.

9.3 Business Tax Policy Options

Goals for corporate/business tax reform could include:

- **Broaden the set of taxpayers.** The corporate income tax is only levied on corporations, so corporations, whether producing in Kentucky or not, bear higher tax burdens for selling in the state than do other business structures.⁷⁴ Similarly, the LLET is only levied on limited liability companies. The taxes could be extended to cover all businesses.
- **Seek to bring taxation of services more in line with the taxation of goods.** A corporate income tax is more likely to be paid by traditional manufacturing than by service firms.

⁷¹ S. 1452, 112th Cong., 1st Sess. (2011); H.R. 2701, 112th Cong., 1st Sess. (2011).

⁷² S. 1832, 112th Cong., 1st Sess. (2011).

⁷³ H.R. 3179, 112th Cong., 1st Sess. (2011).

⁷⁴ The set of taxpayers is even narrower because Kentucky is limited in its ability to tax certain corporations, such as those whose only relationship with the state is to solicit for the sale of tangible personal property. This is based on federal legislation, usually referred to as PL 86-272, which prevents states from imposing a corporate income tax on firms whose only relationship with a state is to solicit for the sale of tangible personal property.

- **Reduce the extent of tax planning.** Businesses often seek to plan their tax liability by designing their corporate structure to exploit differences in state tax systems. Tax liabilities will be lowest for those firms that are best able to exploit the overall system. At a minimum, corporations that operate solely within Kentucky will pay higher tax burdens than firms better able to tax plan.
- **Stimulate Kentucky's economy.** Everything else equal, lower corporate taxes will enhance the state's economy. Of course, the net effect of higher taxes combined with spending that makes business more productive could be positive for the economy.

Tax options are raised in light of these goals and the remainder of this section discusses three groups of options: reform of the existing taxes, major change in the business tax structure, and property tax changes.

Reform the existing corporate and LLET tax structures:

Business Tax Option 1: Conform the corporate income tax base with Federal Code as of a specific date

Compliance and administration costs are lessened when the U.S. government and state governments use the same bases for their taxes. But, federal definitions are often changed using short term goals without consideration of implications for state government tax revenues and in some cases using poor policy. Conforming with federal legislation as of a specific date minimizes compliance and administration costs while permitting Kentucky to determine whether to conform to future federal policy changes.

The precise impact of this option depends on federal code at the date of conformity. Based on current code, the revenue impact is estimated to be -\$16 million with this amount decreasing over time.

Business Tax Option 2: Addback management fees in calculation of the corporate income tax base

States use one of several means to reduce the extent of tax planning including:

- Enact addback rules
- Enact combined reporting
- Assert economic nexus over passive investment companies
- Audit passive investment companies for business purpose
- Extend corporate income taxes to LLCs or all business structures.

Kentucky has chosen to use addbacks, as evidenced by the inclusion of trademark payments in calculation of the corporate income tax structure. Addback statutes apply to specifically identified intercompany expenses, such as royalties, interest, and management fees. When addbacks are required, the intercompany expense is effectively disallowed for corporate income tax purposes. Addback statutes may result in more accurate measurement of income attributable to a state if the intercompany payments do not reflect real costs. Also, addback statutes will often bring a taxpayer's attention to an expenditure item, requiring the taxpayer to self assess whether the amount is

reasonable and traceable. Twelve states have addback requirements that include royalties, intangible-related interest, intercompany interest, and management fees and another 13 states have narrower addback requirements such as in Kentucky. This option expands Kentucky's addback statute to include management fees. Addback requirements always increase tax revenue because by definition they either have no effect or raise a company's corporate income tax base. The option is expected to raise about \$13 million.

Business Tax Option 3: Use Destination Sourcing for Services

Services are situated where they are produced rather than where they are used. As a result, greater weight on the sales factor does not have the same effect on services. Kentucky corporate tax liabilities rise as more services are produced in the state (regardless of whether the services are sold in or out of the state) and the tax does not increase for firms that produce services out-of-state for sale in the state. Thus, greater weight on the sales factor discourages production of services in Kentucky.

Eleven states, including several from the competitor group, have recognized that situsing of services on an origination basis is inconsistent with their efforts to stimulate the economy and have amended their statutes to tax services where they are enjoyed rather than where they are produced. Table 1 lists these states and when they adopted destination situsing.

Table 9.2: States Destination Situsing the Services Factor

State	Year adopted destination situsing
California	2011
Georgia	2002
Illinois	2009
Iowa	2002
Maine	2007
Maryland	2006
Michigan	2008
Minnesota	Many years
Ohio*	2003
Utah	2009
Wisconsin	2005

*Replaced corporate income tax with a gross receipts tax.

Four arguments can be made for using destination situsing for services. First, destination sourcing of services is consistent with the way Kentucky sources goods so this would allow even taxation between goods and services. Economists argue for even taxation, which is often termed neutral taxation, because neither the goods nor the service producing sector is tax advantaged relative to the other. Further, consistency in the treatment between goods and services would remove possible ambiguity in the statutes since it is not always clear whether companies are selling goods or services.

Second, as described in the section on single factor sales apportionment, origin taxation of services raises the costs of producing in Kentucky since the tax is imposed whenever production occurs in the state. The cost imposed by the tax discourages firms from producing services in Kentucky for sale to residents of other states (or at least encourages firms to locate any expansions in their service production outside the state) because tax is imposed on the production. But, the structure is even more perverse because it discourages production in Kentucky for sale to Kentucky businesses and people. No tax is imposed on firms that sell services to Kentucky residents that are produced in other states but the tax is imposed if the same service is sold by a Kentucky firm to in-state residents. Thus, the incentive is to produce services outside the state.

Third, under origin sourcing, firms that produce services in the state and sell services outside the state can be taxed twice on the activity. Differences in state tax structures can result in businesses paying tax in more than one state on the same profit. Specifically, Kentucky firms can pay tax to the state and pay taxes again if the services are sold to destination situsing states such as Georgia and Illinois.

Fourth, destination sourcing of services is consistent with other recent changes in corporate taxation. Most states, including Kentucky, have moved to place more weight on the sales factor as a way to reduce the taxation of production in their state. Origin sourcing of services is inconsistent with the objective of reducing the taxation of in-state production by raising the weight on the sales factor.

The revenue implications of destination situsing cannot be measured based on any information filed on existing tax returns because firms report on an origin basis. Indeed, firms probably cannot indicate how they would file if Kentucky changed the situsing statutes because firms may alter where they produce services and how they file. Empirical analysis of how revenues have been affected by adoption of destination sourcing in other states suggests that the net effect on tax revenues is probably very small, with the odds of a small decrease being about the same as a small increase.

Business Tax Option 4: Replace the double-weighted sales formula with single factor sales apportionment for the Corporate Income Tax

Multi-state firms are required to apportion their corporate income tax between states. All states use a variation on a three-factor formula that apportions based on the location of payroll, property and sales. Essentially all states placed equal weight on the three factors several decades ago. Further, states have traditionally sitused sales of goods to where the market is located (on a destination basis). As a result, there has been a strong tendency to increase the weight on sales in the formula, which moves the tax towards a sales tax at a rate that depends on the profitability of the corporation. Kentucky double weights sales (puts 50 percent weight on the sales factor) in the formula. At least 12 states now use single factor apportionment based on sales and another four or more states have greater weight than Kentucky, but do not have single factor apportionment.⁷⁵ Movement to single factor sales weighting of the corporate income tax has been justified as a way to reduce taxation of production because the tax becomes linked to the amount of sales in a state and not the amount of employment, investment or production. Changes in the apportionment formula weightings have no implications for a firm that produces and sells its entire product in Kentucky.

⁷⁵ <http://www.taxadmin.org/fta/rate/apport.pdf>

The effects of increasing the weight on sales and decreasing them on employment and production in a state depend on the net of several factors. Greater emphasis on the sales factor raises the tax on purchases by instate buyers (some of whom are businesses producing in the state) which presumably discourages buying (or at least raises the costs for corporations to sell) in the state by both businesses and consumers. On the other hand, lower weights on property and payroll reduce the costs of hiring workers and using physical capital in the state. The net effect is an empirical question. Research generally finds that state economies are stimulated by greater emphasis on the sales factor (moving towards a destination tax), but the effects on individual states depend on specific characteristics of the region where the state is located.

Assuming no change in purchasing patterns, increasing the weight on the sales factor means more tax revenues will be remitted by firms that produce relatively less in a state than they sell and the reverse for firms that produce more than they sell. The effect on aggregate revenue depends on the net effect of the two groups of firms plus any influence on firm and consumer behavior as the tax structure is altered. The overall research has somewhat mixed results with some suggesting more revenues and some less revenues. Estimates for Kentucky from the Department of Revenue place an annual loss of \$64 million in revenue.

Business Tax Option 5: Lower the \$3.0 million LLET threshold to \$1.0 million and phase out the effects through \$2.0 million

Kentucky made a number of changes in its corporate tax structure in 2005 and 2006. Like most states, Kentucky did not revise its tax statutes when it legislated the LLC, in 1994, as a possible organizational structure and later imposed the corporate income tax on LLCs. Kentucky also enacted a minimum tax as a percent of gross receipts as part of the corporate income tax structure. Subsequently, the limited liability entity tax (LLET), which is levied on all firms with limited liability including C-corporations, was enacted and LLCs were exempted from the corporate income tax. The LLET imposes the minimum of 0.75 percent on profits or .095 percent of gross receipts. Companies paying the corporate income tax are permitted a non-refundable credit against the LLET for corporate income taxes that are paid. The LLET limits the extent of tax planning for C-corporations and imposes a small tax on LLCs. Kentucky could move back to a single tax by building the minimum gross receipts tax into the corporate income tax structure and imposing the corporate income tax on LLCs. This improves the tax structure since LLCs and LLPs are often used inside of corporate umbrellas for tax planning purposes. The LLET collects some tax from LLCs and unprofitable corporations, but still gives companies an incentive to tax plan using LLCs inside the corporate structure. A much more restricted alternative is to lower the threshold that determines the minimum amount paid under the LLET to \$1.0 million (or less) and phase out the benefits of the exemption until \$2.0 million in revenues.

The revenue threshold in the LLET is relatively large. A minimum \$175 tax is levied on limited liability entities with \$3.0 million or less in revenues and the benefits are phased out through revenues of \$6.0 million. A decision on the appropriate threshold should be made after considering effects on administration and compliance, revenues, and economic efficiency. Taxing all transactions in a similar fashion lessens distortions in business practices and consumer purchases and imposing special rules such as thresholds is likely to create unintended consequences. The \$3.0 million threshold places a kink in the tax system where essentially no compliance is necessary below the legislated amount and full compliance is necessary above the amount. Behavioral changes can be

expected when certain taxpayers are omitted from the tax and the potential for distortions rises with the size of the threshold. For example, companies could seek to avoid the tax by splitting into multiple businesses, each operating just below the threshold. Vendors in certain industries, and particularly ones characterized by low productivity, will be most likely to operate below the threshold. LLET revenues are surely reduced significantly by the threshold. A larger threshold reduces the number of firms required to comply with the LLET, which essentially eliminates compliance costs for the firms and reduces the number of taxpayers that Kentucky must control.⁷⁶ It is important to remember that the administrative costs for firms below the threshold are not eliminated since Kentucky still must do some audit of whether firms meet the minimum threshold for compliance and the possibility exists that firms will intermittently comply as they exceed the threshold some years and not others.

The \$3.0 million threshold means that 82 percent limited liability entities pay the minimum \$175 tax. Certainly, some of the reason is that the kink in taxes at \$3.0 million provides firms with an incentive to stay small or to divide into small firms. Some examples exist from practice around the world. Ohio established a \$1.0 million threshold for the CAT and a strong case can be made that this is too high. No country in the European Union allows a threshold above approximately \$140,000.

The Department of Revenue estimates a gain in \$14.2 million in revenue from this option.

Major reforms:

Business Tax Option 6: Replace the Corporate Income Tax and LLET with a Gross Receipts tax or some other sources of revenue.

Michigan, Ohio, Oklahoma, and Texas, recently imposed differing versions of a gross receipts tax (GRT) on all businesses, including corporations and unincorporated businesses.⁷⁷ A number of other states, including Washington and Delaware, have imposed such taxes for many years. Kentucky could impose a similar tax, and already does to some extent with the gross receipts alternative base under the LLET. The GRT would differ from a sales tax in that no exemptions would be allowed but also in that the rate would be very low (Ohio's rate is 0.26 percent). Implications of the GRT for Kentucky's economic activity can be limited by imposing the tax only on transactions that have their destination rather than their origin in Kentucky. Thus, no tax would be imposed on sales by Kentucky firms to businesses and residents outside the state. Tax would be imposed on all sales to buyers in the Commonwealth, whether the purchaser is a consumer, business or government. Additional cost would be imposed on firms operating in Kentucky if they buy inputs (on which the tax would also be levied). The component imposed on inputs would be implicit in the costs of operation in Kentucky whether the firm sells to Kentucky or out-of-state buyers.

A GRT can expand the set of business taxpayers by including unincorporated businesses and firms protected from corporate income taxes by the PL 86-272 constraint. PL 86-272 is a limitation on income based taxes, so it may not apply to a gross receipts tax, depending on how the courts ultimately rule on this issue. GRTs are also a means to expand the taxation of the service economy relative to the goods economy since service firms are less likely to be incorporated (which means

⁷⁶Firms will need to keep accurate bookkeeping and accounting records for business purposes, but these should not be viewed as compliance costs.

⁷⁷ Michigan subsequently eliminated its gross receipts tax.

they are not paying the corporate income tax) and their sales are less likely to be taxable through the sales tax. Further GRTs are a means to limit tax planning, since managing the corporate profits that are reported for tax purposes is a common form of planning and it is more difficult to tax plan around gross receipts taxes.

Economists generally object to gross receipts taxes because the extent to which the tax is built into prices (i.e., the tax cascades) depends on the number of steps that items pass through in the production process. Cascading distorts relative prices compared with a uniform tax on all consumption and should cause consumers to buy relatively less goods and services where the greatest cascading occurs.⁷⁸ A related problem is that firms may choose to vertically integrate to avoid the tax, which reduces efficiency if firms are only integrating to avoid the tax. A low tax rate should lessen the concerns about vertical integration and distortion of behavior. A State of Washington study measured the degree of cascading from a GRT (defined as the effective tax rate on an industry divided by the actual tax rate) for a range of different industries.⁷⁹ On average the effective rate was 2.5 times the stated tax rate,⁸⁰ but the degree of cascading varied from 6.7 times for industries such as food manufacturing and petroleum refining to 1.4 times for data processing.

Individual businesses may object to a GRT either because they do not understand it or because their tax liability rises. Assuming revenue neutral imposition of the tax, unincorporated, unprofitable, and service firms will generally see a tax increase and incorporated, profitable, and heavier industries will see a decrease. Firms with very low markups (such as grocery stores) will be particularly likely to object because they will view the tax liability as large relative to their gross margin.

A GRT would entail lower administration and compliance costs than the existing taxes, since firms would only need to calculate sales in Kentucky and would not need to calculate profits. For corporations, the tax base can be thought of as the numerator for the sales factor in the corporate income tax formula, which is simpler to calculate. The Ohio tax return is essentially a postcard because it only requires gross receipts, an exclusion, and calculation of tax liability. On the other hand, movement to a new tax structure entails a series of transition concerns. Issues will need to be decided such as, how are accrued credits to be treated, will firms be able to carry losses developed prior to the tax forward, how will previously promised tax incentives be handled and so forth.

Calculating the revenue neutral GRT rate is complicated because it requires estimating the total number and value of transactions in the Kentucky economy and making assumptions about the extent to which deductions or exemptions would be allowed. Ohio adopted a very broad based tax with very few exemptions; though the Ohio statute allows a \$1 million exclusion from the base (a \$150 minimum tax is imposed). The Ohio experience provides a pattern for estimating the lowest possible rate that could be imposed in Kentucky (since the base is so broad). The Ohio Department of Taxation reports that total gross receipts reported on tax returns were \$665.2 billion in 2008 and taxable gross receipts after the exclusion were \$579.5 billion, which is 1.23 times the size of Ohio Gross Domestic Product. Then assuming that taxable gross receipts in Kentucky would be also be approximately 1.25 times its GDP of 164 billion, to raise the loss revenue from the Corporate Income Tax and LLET of \$675 million, the tax rate would need to be .33%.

⁷⁸ Of course, neither the sales tax nor the corporate income tax is uniform against all commodities either.

⁷⁹Washington State Tax Structure Study, "Tax Alternatives for Washington State: A Report to the Legislature," Final Report, November 2002.

⁸⁰Washington imposes 18 different tax rates, which may explain some of the cascading.

Alternatively, another option would be to entirely eliminate the corporate income and LLET taxes and replace with other sources of revenue, presumably taxes on consumption rather than business.

State corporate income taxes are justified on several grounds but none of them appear to hold up well to scrutiny. Corporate income taxes are generally intended to raise revenue, but the question remains why this tax is the best option for generating revenues. Two explanations are often given for choosing the corporate income tax relative to alternative revenue sources, such as personal income, sales or property taxes: to tax retained earnings or as a payment for the benefits from public services.⁸¹ Several other arguments for corporate taxation are also mentioned occasionally, including because businesses are an easier point than individuals for collection of taxes and as a means of diversifying government tax instruments. The latter two probably are not good justification in Kentucky.

Corporate income taxes could be imposed to ensure taxation of retained earnings. In the absence of a tax on retained earnings, individuals have the incentive to house their assets and incomes in a corporate structure to avoid the individual income tax. The argument surely has some merit at the national level, but existence of the federal corporate income tax may be sufficient to limit the use of the corporate form to avoid the individual tax and should preclude the need for state corporate taxes for this purpose (particularly if Kentucky requires taxpayers to file in Kentucky in the same way as nationally). Further, a corporate income tax on retained earnings should be paid where the owners of capital (the shareholders) reside, but the corporate income tax is apportioned to the state where firms' physical assets or the market for their product is located. Thus, the corporate income tax accrues to the wrong state, and likely at the incorrect rate, to attain this objective.

The corporate income tax may be intended as a charge for the benefits that firms receive from public services. The public sector provides corporations with limited liability, which could be justification for a tax only on firms granted limited liability but this certainly argues for a tax on all firms with limited liability and not just C-corporations. Business taxes, such as the corporate income tax, have also been justified as a means of charging for the broader public service benefits available to businesses, such as access to the legal system and a trained labor force. A tax levied only on corporations is too narrow to serve as a charge for general public service benefits, because all firms, whether corporations or pass-through entities and whether profitable or not, benefit from public services. Thus, a benefits tax justification argues for a broad tax on business. But, businesses pay the range of other taxes, such as the sales, property, and unemployment insurance taxes, and pay approximately 40 percent of all taxes (see Ernst & Young, 2012). It seems unlikely that the public service benefits accruing to corporations are sufficient to justify an additional tax on corporations based on the benefits they receive.

The bottom line is that no strong justification for a corporate income tax appears to exist except that it raises money. But revenue from a corporate income tax comes at a very high cost in terms of economic distortions, such as effects on the relative use of capital versus labor and the location of

⁸¹ An argument may also be made that capital is undertaxed relative to labor if state individual income taxes are levied on labor but state corporate income taxes are not imposed on capital (see Inman and Rubinfeld, 1997, for discussion of the tendency to undertax capital at the subnational level). But, the local property tax operates as a significant tax on capital and certainly overcomes at least some of the concerns about low state/local taxes on capital since the property tax generates more revenue than either the sales or personal income tax.

business. Overall, state corporate income taxes perform poorly as revenue instruments because they can cause significant economic distortions, are expensive to administer, and attract much more than their share of legislative attention. As a result, a compelling case can be made for eliminating the tax.

The CIT and LLET generate very little revenue in Kentucky and much of the tax is likely to be reflected in lower wages for Kentucky workers or higher product prices for Kentucky buyers. The Commonwealth could choose to tax people directly by replacing the corporate and LLET tax revenue with a broader sales tax base or by raising the personal income tax rate. Effectively, the argument is that it is more efficient to impose taxes directly on people than to impose taxes on corporations with the expectation that the tax will be passed forward to people in higher product prices or lower wages. The state's economy will be strengthened by not using business as an intermediary to tax people.⁸² Further, Kentucky would receive the public relations benefit of saying that the state imposes no tax on corporations. As described above, the academic literature indicates that lower rates offer some economic benefits by attracting business activity, and a 0 rate would offer the greatest advantage.

Property Tax Options:

Options 7-9 focus on the property tax, and generally the property tax on business. However, option 9 also applies to residential property taxes.

Business Tax Option 7: Eliminate Personal Property Taxation

Options 7 and 8 deal with taxation of categories of tangible personal property. Personal property generally includes property other than real property. The first option is to exempt all personal property from taxation. Kentucky currently taxes machinery and equipment, motor vehicles, inventories, mobile homes and boats among others, at least under certain circumstances. Kentucky imposes the state but not the local tax in certain circumstances. An intermediate option is to exempt all personal property that is taxable only at the state level. Eleven states generally exempt tangible personal property, including Ohio which exempted tangible property in recent years.⁸³

Exemptions for personal property are often considered either because of administrative problems or fear that taxation of equipment and inventories can create significant distortions. Difficulties in valuing many types of equipment are the main administrative concern. All taxes affect behavior, but a specific concern is that a tax levied directly on equipment and inventories will cause firms to be less productive as they employ less capital or to be less likely to locate in Kentucky. Implications of some taxes on personal property have been lessened by exempting the local share, but further steps could be taken. Mobile homes used for residential purposes should probably be included in the base since they are an alternative to residing in real property.

Business Tax Option 8: Exempt inventory from property taxation and eliminate the Barrel Tax

Inventories are included in the property tax base using declarations provided no later than May 15th. State but not local taxation applies to certain inventories in specific circumstances, such as motor

⁸²Of course, the sales tax would also be more heavily imposed on domestic activity to the extent that Kentucky is unable to effectively collect sales tax on remote vendors and the sales tax is levied on business inputs.

⁸³ See http://www.lincolnst.edu/subcenters/significant-features-property-tax/Report_Taxable_Personal_Property.aspx

vehicles, farm equipment and boats that are held for sale. Only 13 other states currently tax inventories. Consideration should be given to exempting inventories. All taxes have the potential to alter behavior, but inventory taxes may be more likely to alter business practices than some other tax structures. The current taxation incentivizes firms to locate inventories outside Kentucky when the taxable value is being determined. The tax is also a disincentive to locate warehousing activity in the Commonwealth.

Consistent with the elimination of inventory from property taxation would be the elimination of Barrel tax. While the stored product subject to this tax may still be in the production process, the disincentives to store product in Kentucky are similar to those for the taxation of inventory. The estimated revenue loss from this option is \$4.7 million.

Business Tax Option 9: Freeze the state property tax rate at 12 cents per \$100 of value

H.B. 44 limits the growth in real property tax revenue to four percent annually, by reducing the tax rate accordingly whenever the property tax base grows faster than four percent. As a result the state property tax rate fell from 31.5 cents per \$100 in 1979 to 12.2 cents, where it has remained for the past five years. Beginning in 2005, new property was excluded in calculating the base growth rate (new property was already excluded in application of H.B. 44 for local tax purposes). Exclusion of new property slows, but does not prevent the rate from falling. This option makes the state property tax more elastic by fixing the tax rate and allowing tax revenues to grow at the same rate as the total value of taxable property. The option also simplifies the state property tax since the rate is fixed. The option would slightly reduce revenues since it lowers the rate from 12.2 to 12 cents.

9.4 Local Revenue Options

While the primary focus of this report has been on state taxation, devising a coherent and effective tax policy for the Commonwealth requires joint consideration of both state and local taxes. State and local tax revenues are not independent – expansions or contractions of taxes by one level of government are likely to affect the revenues of the other level of government, a phenomenon economists refer to as *vertical fiscal externalities*. A classic example is that of federal and state taxes on tobacco. Increases in the federal tax, by reducing the consumption of cigarettes, will reduce revenues from state cigarette taxes. An example for Kentucky might be related to the state individual income tax and occupational license taxation. If Kentucky increases individual income tax rates it might lead to relocation of households and firms employing them along our borders to our neighboring states. This would reduce revenues to the local governments losing employment as a result of the state's actions. Then, for this reason, and others it is important to give some thoughts to local revenues when consider state tax reform.

9.4.1 Concerns about and Issues regarding the Local Taxation in Kentucky

Section 7 provides a discussion of some of the more important concerns about local taxation in Kentucky. Here, before discussing options for reform, we briefly summarize them:

- **Revenue collection in Kentucky is extremely centralized.** Currently (2009), approximately 65% of state and local revenue in Kentucky is collected by the state government. Among our competitor states only West Virginia has more revenue collected by state government. There are

a couple of reasons that this may be a concern. First, if the state is feeling more constraints imposed on its ability to raise revenues, aid to local governments might decrease in an undesirable way. Current tax options for local governments leave them few choices. Second, significant transfers from the state to local government may result in the wrong economic signals being conveyed about the economic conditions and productivity of local areas in the state as well as reducing local fiscal discipline. Less reliance on state governments will require better alignment of local expenditures with local revenues.

- **Local Tax Sources in Kentucky significantly differ from Competitor States.** This, by itself, may not be a concern – the other states might have it wrong or have very different economic conditions. However, it does suggest a review of local revenues options might be in order. Of particular concern is the heavy use of local income taxes (the occupational license tax). Kentucky is one of only 15 states using local income taxes and local governments in Kentucky raise 25% of their revenue from this source compared to 4% for its competitor states. In contrast, approximately 12% of local revenue for our competitors comes from a general sales tax; Kentucky localities do not have the sales tax as an option. The use of local occupational license taxes in Kentucky along with our relatively high state individual income taxes makes for very high marginal tax rates on labor in a state with much of its economic activity on borders with states with much lower taxes on labor.

9.4.2 Options for Reforming Local Taxes

Here we propose only one option for local governments, the use of a local general sales tax. Below we outline some of the rationale for this option and discuss some issues regarded in its implementation.

Local Tax Option 1: A Local General Sales Tax

The ability of local governments to use a general sales tax will give them more flexibility and stability in their revenue collections. However, for a number of reasons the state must impose some limitations and constraints on the imposition of local sales taxes.

First, the local general sales tax must be collected by the state and it must be imposed on the same base. Independent collection would be costly and lead to significant problems with compliance. These criteria also follow the *Streamline Sales and use Tax Agreement* to which Kentucky is a full participating member.

Second, another concern is the pyramiding of tax collections by having different local governments within an area— for example, counties, municipalities, and school districts in the same area --- using different general sales tax rates. Collections by the state will significantly reduce the administrative concerns regarding multiple local entities but situsing the sales across local governments and multiple tax rate will increase the complexity for businesses and state tax collectors.

A third consideration is what locality receives the tax revenue. Tax revenue will be collected at the point of sale but as much as possible our recommendation is that receipt of tax revenue be *destination* not *source* based. Thus if a good is ordered in one municipality but shipped elsewhere the tax revenue should be credited to the municipality where the good is shipped and presumably

consumed. True destination taxation will only occur with goods that are shipped since the tax will be paid where possession of an item is taken if a person drives to a store in another county and takes possession in the other county.

The state will need to impose limits on the rates that local governments can set. As discussed earlier, a local sales tax will reduce state tax collections by decreasing sales in the state. This will be a particular concern for localities on state borders – high local sales taxes in these areas can be expected to reduce retail revenues and associated state tax revenues. Use of the sales tax by multiple types of local governments only compounds these concerns about the interdependent tax bases and the associated impacts on revenues.

As a result of a decrease in sales in Kentucky subject to the general sales tax as a result of the imposition of local sales taxes, state revenues are estimated by the Department of Revenue to decline by \$10 million.

Finally, it should be mentioned that a local option sale tax (LOST) requires a constitutional amendment. The Supreme Court has held that under Ky. Const. § 181 the General Assembly cannot delegate the power to levy excise taxes such as sales and use taxes to subordinate units of government such as cities and counties *IC.C.C. Coal Co., Inc. v. Pike County*, 536 S.W.2d 467 (Ky. 1976)).

10. *Appendix*

Table A.2.1: State Tax Revenue Totals (2011)

State	Per Capita		Revenue by Source (%)					
	\$	Rank	Property	Sales	Select Sales	Individual Income	Corporate	Other
Kentucky	2,335	2	5	28.4	19.6	33.5	5.1	8.4
Alabama	1,798	9	3.7	25.2	27.8	32.4	3.5	7.5
Georgia	1,630	13	0.5	31.7	12.7	47.9	4.2	3.1
Illinois	2,287	5	0.2	25.2	21	38.1	6.3	9.1
Indiana	2,288	4	0	42.1	17.2	30.7	4.8	5.2
Mississippi	2,254	6	0.4	43.7	20.7	21.6	5.3	8.5
Missouri	1,682	11	0.3	29.4	16.4	44.9	3.2	5.9
North Carolina	2,320	3	--	27.6	16.7	44	4.9	6.7
Ohio	2,181	7	0	30.9	19.2	35	0.9	14
South Carolina	1,643	12	0.1	36.3	16.5	37.8	2.8	6.4
Tennessee	1,696	10	--	57	18.8	1.7	9.8	12.6
Virginia	2,150	8	0.2	19.9	13.7	54.7	4.6	6.8
West Virginia	2,772	1	0.1	23.5	23.5	32.4	6	14.5

Source: U.S. Bureau of the Census and Bureau of Economic Analysis. The Per Capita measure uses 2011 population estimated from the Census. The Percent of Personal Income measure uses 2010 state personal income from BEA. Selective sales taxes are state Excise taxes (i.e., motor fuel, alcoholic beverages, etc.).

Table A.2.2: State and Local Revenue Totals (2009)

State and Local Own- Source Revenue					State and Local Tax Revenue						
State Share			Per Capita		Revenue by Source (%)						
State	%	Rank	\$	Rank	Per Capita	Property	Sales	Select Sales	Individual Income	Corporate	Other
Kentucky	66.0	2	4905	10	3210	20.6	20.6	16.9	31.3	3.6	6.9
Alabama	56.1	7	4926	9	2806	17.9	29	18.1	20.9	3.7	10.4
Georgia	46.0	13	4868	11	3275	33.1	28.5	8.6	24.8	2.2	2.8
Illinois	49.8	12	6019	1	4436	40.1	19	15.6	16.2	3	6
Indiana	56.5	5	5638	4	3696	30.3	26	11.7	23.9	3.5	4.6
Mississippi	59.4	3	4984	8	3042	26	33.6	13.5	16.5	3.6	6.7
Missouri	51.4	11	4839	12	3224	28.7	25	11.9	26.4	1.7	6.3
North Carolina	56.5	5	5121	7	3350	25.7	23.3	11.8	30.2	2.8	6.2
Ohio	53.8	9	5675	3	3812	29.8	20.4	11.5	28.7	1.4	8.2
South Carolina	55.0	8	5322	6	2851	33.8	23.9	10.8	21.5	1.9	8.1
Tennessee	52.3	10	4592	13	2836	26.3	46.4	11.6	1.2	4.6	9.9
Virginia	57.0	4	5971	2	3970	35.8	14	11.5	29.2	2	7.4
West Virginia	73.2	1	5421	5	3467	20.4	17.3	19.3	24.3	6.6	12.1

Source: U.S. Bureau of the Census. Own Source Revenues are all revenues collected by state & local government from its own sources (excluding federal transfers).

Figure A.3.1A: Public Welfare Spending as a Percent of Income, 2009

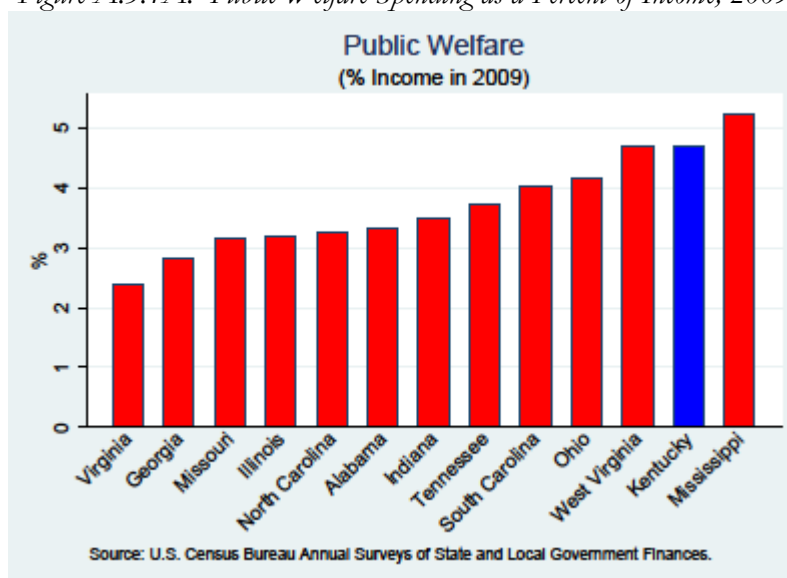


Figure A.3.1B: Public Welfare Spending per Capita, 2009

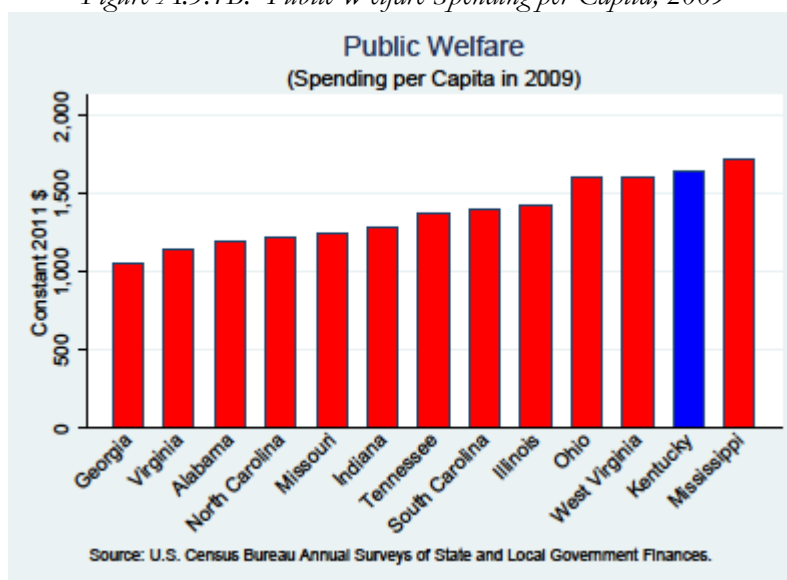


Figure A.3.1C: Public Welfare Growth in Spending, 2001-2009

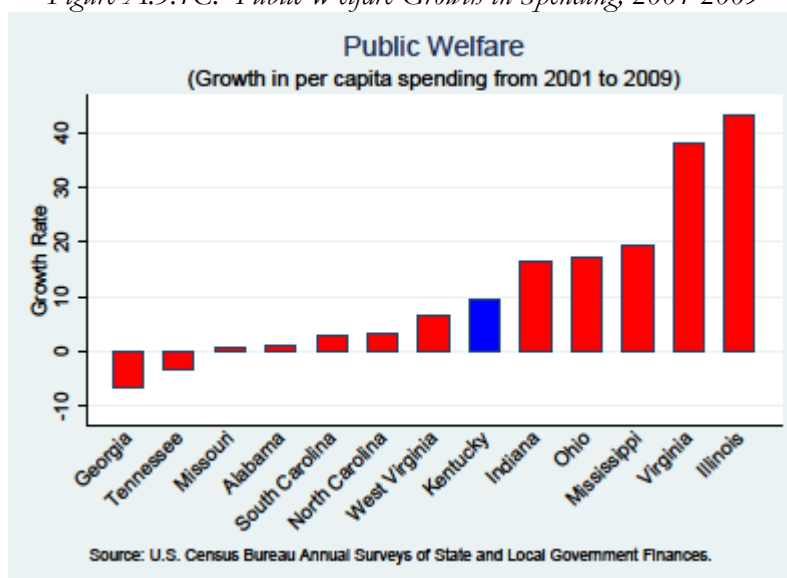


Figure A.3.2A: Elementary and Secondary Education Spending as a Percent of Income, 2009

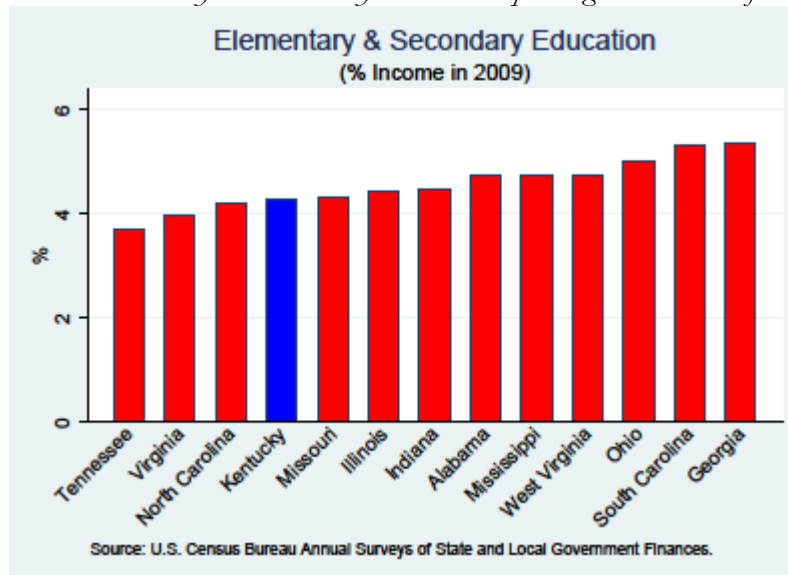


Figure A.3.2B: Elementary and Secondary Education Spending per Capita, 2009

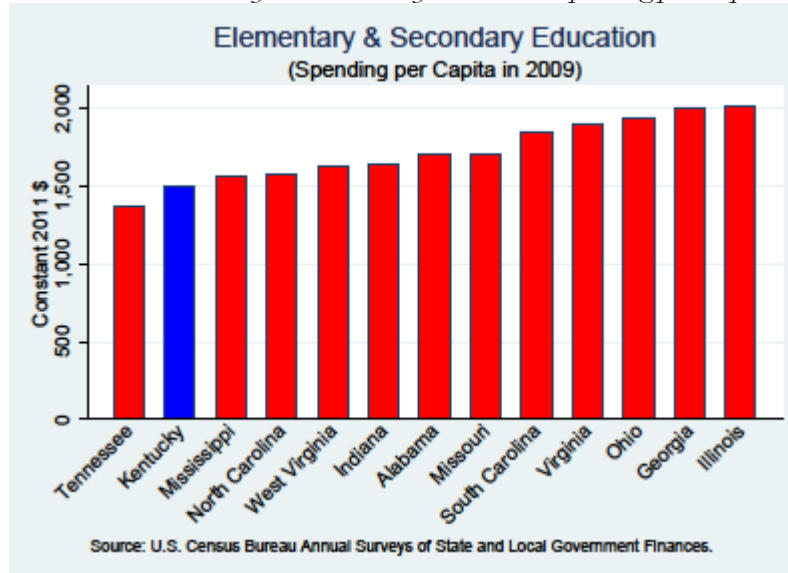


Figure A.3.2C: Elementary and Secondary Education Growth in Spending, 2001-2009

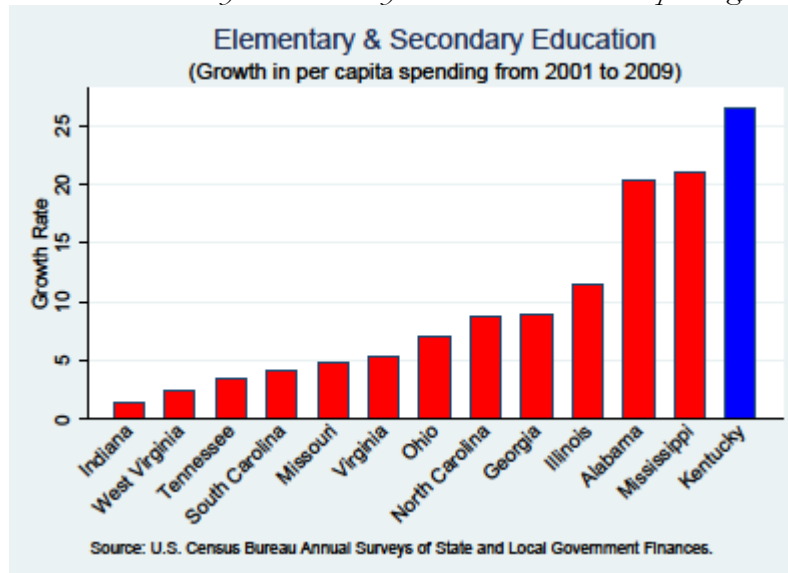


Figure A.3.3A: Higher Education as a Percent of Income, 2009

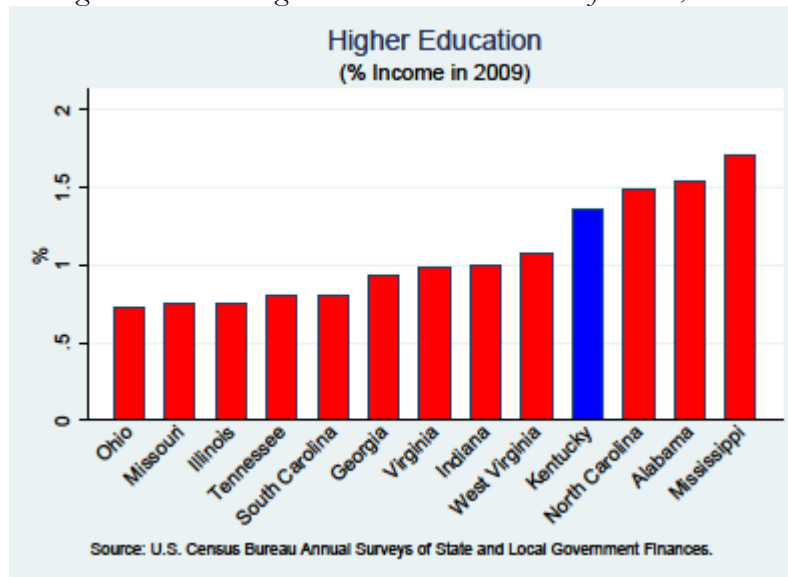


Figure A.3.3B: Higher Education Spending per Capita, 2009

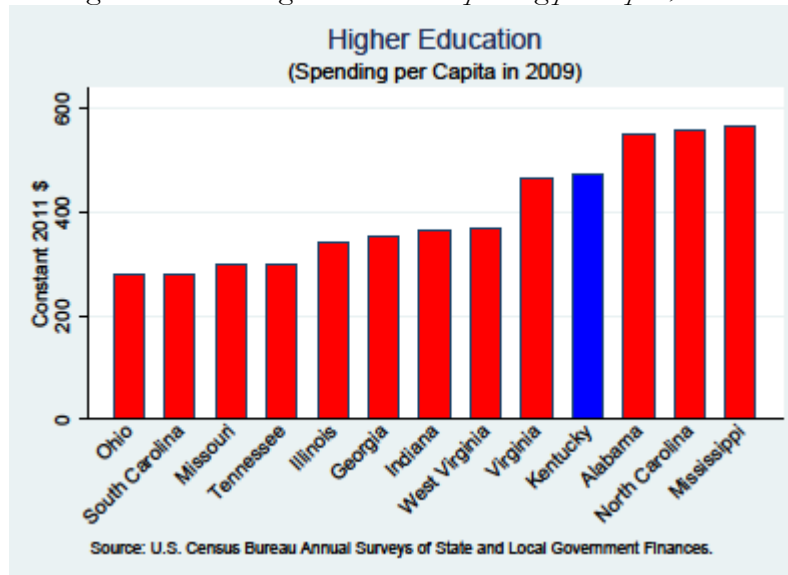


Figure A.3.3C: Higher Education Growth in Spending, 2001-2009

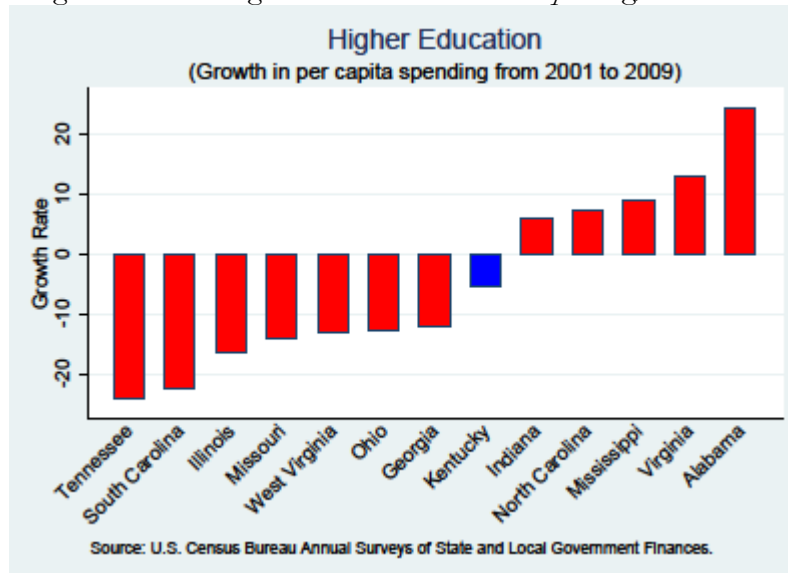


Figure A.3.4A: Transportation as a Percent of Income, 2009

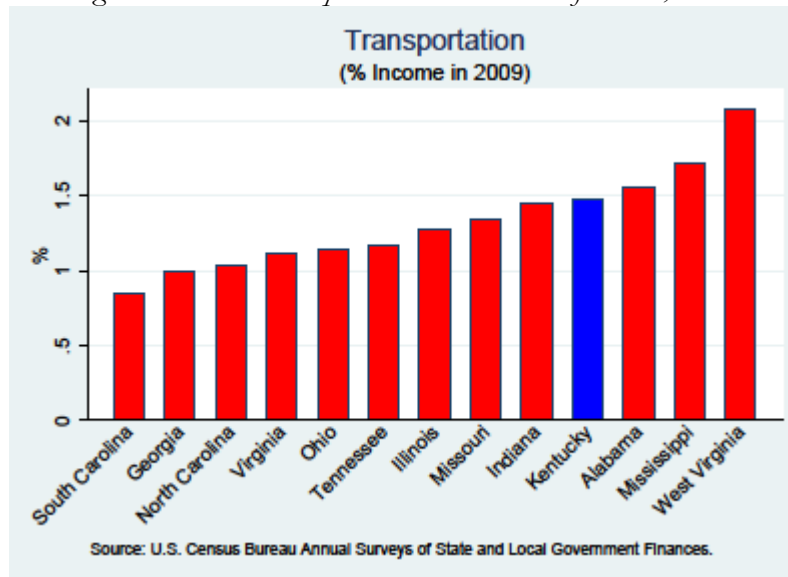


Figure A.3.4B: Transportation Spending per Capita, 2009

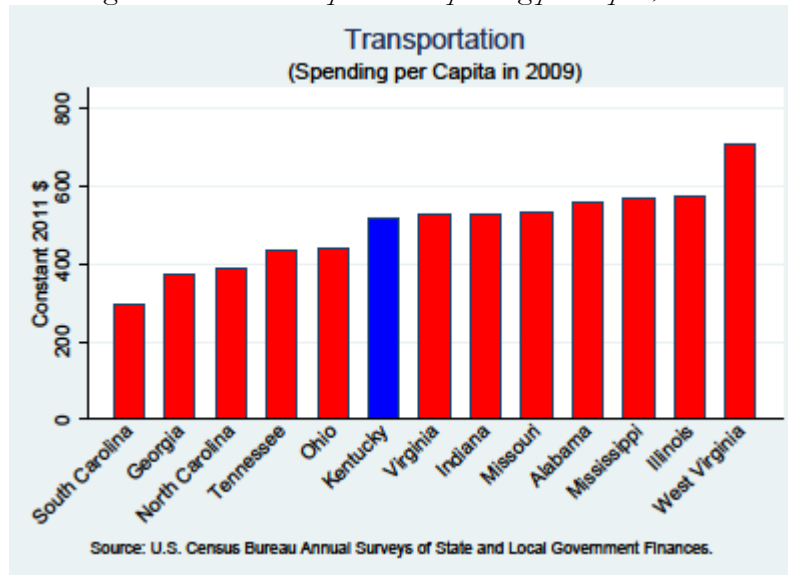


Figure A.3.4C: Transportation Growth in Spending, 2001-2009

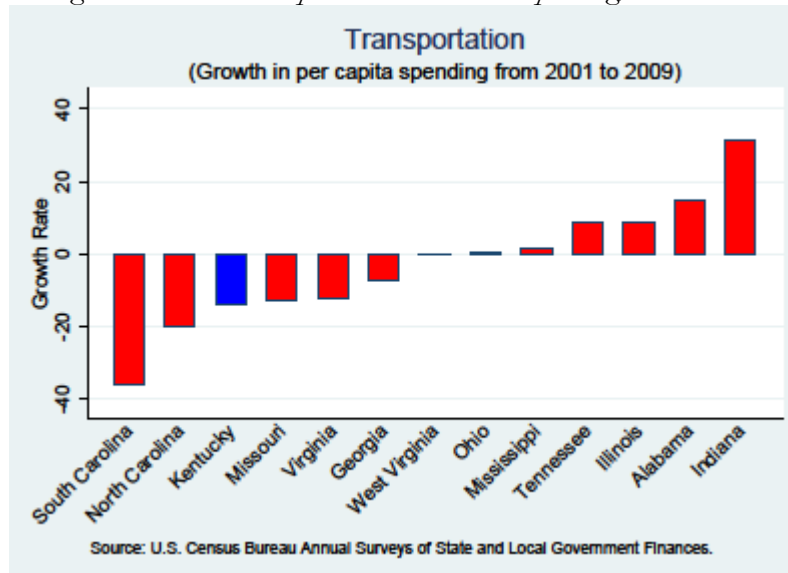


Figure A.3.5A: Corrections as a Percent of Income, 2009

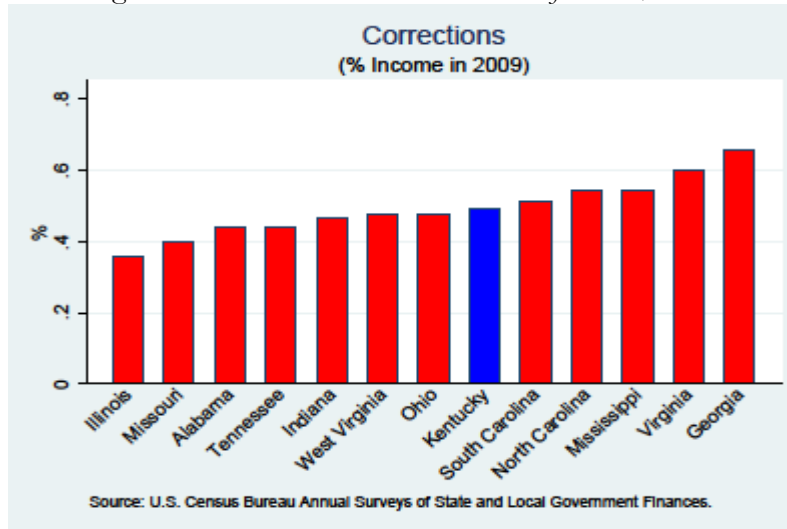


Figure A.3.5B: Corrections Spending per Capita, 2009

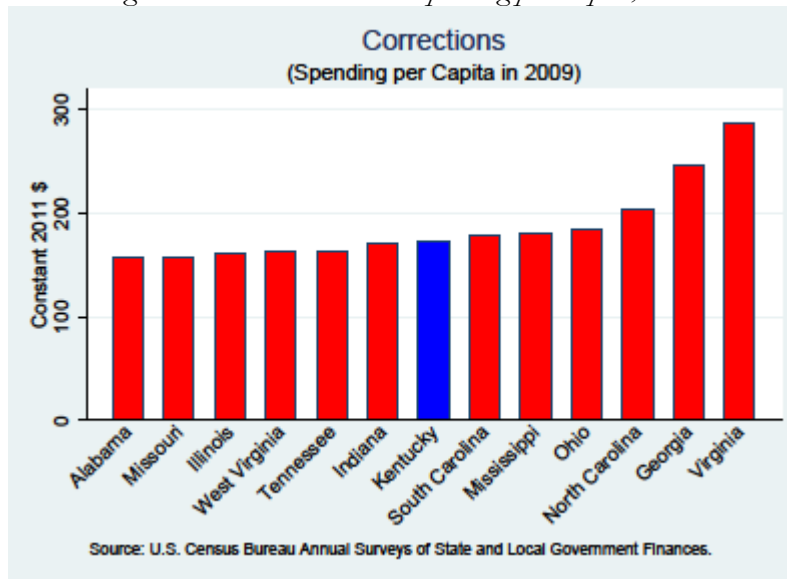


Figure A.3.5C: Corrections Growth in Spending, 2001-2009

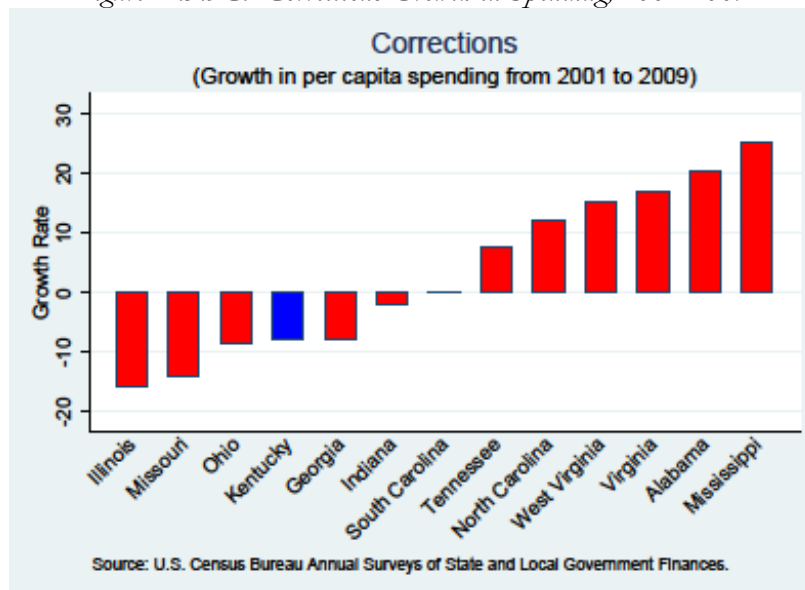


Table A.4.1: Estimated Direct General Sales Tax Burdens (2010)

Item	All consumer units	Less than \$5	\$5 to \$9,999	\$10 to \$14,999	\$15 to \$19,999	\$20 to \$29,999	\$30 to \$39,999	\$40 to \$49,999	\$50 to \$69,999	\$70 to \$79,999	\$80 to \$99,999	\$100 to \$119,999	\$120 to \$149,999	\$150 and more
Average annual expenditures.	\$48,108	\$20,747	\$18,296	\$19,909	\$24,934	\$29,158	\$35,556	\$40,616	\$47,965	\$57,024	\$62,966	\$74,797	\$89,613	\$123,063
Average Income	\$62,481	(\$1,104)	\$8,082	\$12,606	\$17,483	\$25,001	\$34,762	\$44,734	\$59,253	\$74,602	\$89,140	\$108,503	\$132,750	\$241,739
Current Code														
Tax Base	\$13,866	\$6,064	\$5,616	\$5,489	\$7,130	\$8,374	\$10,519	\$12,001	\$13,798	\$17,134	\$17,698	\$22,058	\$27,419	\$34,061
Taxes Paid	\$831	\$363	\$336	\$329	\$427	\$502	\$631	\$720	\$827	\$1,028	\$1,061	\$1,323	\$1,645	\$2,043
Taxes Paid (% of Income)	1.33		4.17	2.61	2.45	2.01	1.82	1.61	1.40	1.38	1.19	1.22	1.24	0.85
Ratio to 2 nd Highest Bracket	1.07	0.00	3.36	2.11	1.97	1.62	1.47	1.30	1.13	1.11	0.96	0.98	1.00	0.68
Taxes Paid (% of Expenditures)	1.73	1.75	1.84	1.65	1.72	1.72	1.78	1.77	1.73	1.80	1.69	1.77	1.84	1.66
Proposal 1 (Current + Consumer Services + Utilities)														
Tax Base	\$18,070	\$7,780	\$7,347	\$7,621	\$9,879	\$11,183	\$13,909	\$15,572	\$17,854	\$21,737	\$22,783	\$28,077	\$34,323	\$45,015
Taxes Paid	\$1,026	\$436	\$408	\$419	\$546	\$620	\$781	\$878	\$1,011	\$1,240	\$1,297	\$1,612	\$1,980	\$2,605
Taxes Paid (% of Income)	1.64		5.05	3.33	3.13	2.48	2.25	1.96	1.71	1.66	1.46	1.49	1.49	1.08
Ratio to 2 nd Highest Bracket	1.10		3.38	2.23	2.10	1.66	1.51	1.32	1.14	1.11	0.98	1.00	1.00	0.72
Taxes Paid (% of Expenditures)	2.13	2.10	2.23	2.11	2.19	2.13	2.20	2.16	2.11	2.17	2.06	2.16	2.21	2.12
Proposal 2 (Current + Consumer Services + Utilities + Food at Home)														
Tax Base	\$21,175	\$9,505	\$9,214	\$9,531	\$12,063	\$13,574	\$16,517	\$18,442	\$21,009	\$25,009	\$26,583	\$32,466	\$39,092	\$50,735
Taxes Paid	\$1,201	\$520	\$492	\$503	\$651	\$743	\$927	\$1,043	\$1,195	\$1,434	\$1,523	\$1,875	\$2,266	\$2,949
Taxes Paid (% of Income)	1.92		6.09	3.99	3.73	2.97	2.67	2.33	2.02	1.92	1.71	1.73	1.71	1.22
Ratio to Highest Bracket	1.13	0.00	3.57	2.34	2.18	1.74	1.56	1.37	1.18	1.13	1.00	1.01	1.00	0.71
Taxes Paid (% of Expenditures)	2.50	2.51	2.69	2.53	2.61	2.55	2.61	2.57	2.49	2.51	2.42	2.51	2.53	2.40

Source: Authors' calculations using the Consumer Expenditure Survey (Bureau of Labor Statistics) 2010 prepublication tables.

Table A. 4.2A: State Income Tax Burdens for Single Filers (2010)

Panel A: State Tax Payments

Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	28	1105	2410	3715	5063
Alabama	283	840	1640	2393	3131
Georgia	158	1057	2365	3715	5065
Illinois	223	666	1391	2116	2841
Indiana	284	799	1632	2465	3298
Mississippi	75	704	1829	2954	4079
Missouri	61	778	1884	3128	4435
North Carolina	287	1280	2857	4638	6417
Ohio	0	516	1518	2602	3896
South Carolina	0	736	2478	4053	5628
Tennessee	0	52	172	292	412
Virginia	171	1000	2291	3584	4878
West Virginia	25	840	2145	3740	5365

Panel B: State Tax Payments (%Income)

Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0.3	4.4	4.8	5.0	5.1
Alabama	2.8	3.4	3.3	3.2	3.1
Georgia	1.6	4.2	4.7	5.0	5.1
Illinois	2.2	2.7	2.8	2.8	2.8
Indiana	2.8	3.2	3.3	3.3	3.3
Mississippi	0.7	2.8	3.7	3.9	4.1
Missouri	0.6	3.1	3.8	4.2	4.4
North Carolina	2.9	5.1	5.7	6.2	6.4
Ohio	0.0	2.1	3.0	3.5	3.9
South Carolina	0.0	2.9	5.0	5.4	5.6
Tennessee	0.0	0.2	0.3	0.4	0.4
Virginia	1.7	4.0	4.6	4.8	4.9
West Virginia	0.2	3.4	4.3	5.0	5.4

Panel C: State Tax Payments (Relative to KY)

Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Alabama	3.8	1.2	0.9	0.8	0.8
Georgia	2.1	1.5	1.3	1.3	1.2
Illinois	3.0	0.9	0.8	0.7	0.7
Indiana	3.8	1.1	0.9	0.8	0.8
Mississippi	1.0	1.0	1.0	1.0	1.0
Missouri	0.8	1.1	1.0	1.1	1.1
North Carolina	3.8	1.8	1.6	1.6	1.6
Ohio	0.0	0.7	0.8	0.9	1.0
South Carolina	0.0	1.0	1.4	1.4	1.4
Tennessee	0.0	0.1	0.1	0.1	0.1
Virginia	2.3	1.4	1.3	1.2	1.2
West Virginia	0.3	1.2	1.2	1.3	1.3

Notes: Estimates are from NBER and are based on calculations using the TAXSIM program.

Table A.4.2B: State Income Tax Burdens for Joint Filers with No Dependents (2010)

Panel A: State Tax Payments					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0	1035	2288	3561	4870
Alabama	10	821	1869	2814	3642
Georgia	24	809	2309	3809	5309
Illinois	156	612	1337	2062	2787
Indiana	231	768	1601	2434	3267
Mississippi	0	355	1531	2638	3745
Missouri	0	430	1702	2954	4287
North Carolina	-21	897	2605	4355	6295
Ohio	0	445	1437	2519	3794
South Carolina	0	206	1894	3644	5394
Tennessee	0	0	104	224	344
Virginia	0	790	2190	3590	4994
West Virginia	0	765	2036	3622	5247
Panel B: State Tax Payments (%Income)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0.0	4.1	4.6	4.7	4.9
Alabama	0.1	3.3	3.7	3.8	3.6
Georgia	0.2	3.2	4.6	5.1	5.3
Illinois	1.6	2.4	2.7	2.7	2.8
Indiana	2.3	3.1	3.2	3.2	3.3
Mississippi	0.0	1.4	3.1	3.5	3.7
Missouri	0.0	1.7	3.4	3.9	4.3
North Carolina	-0.2	3.6	5.2	5.8	6.3
Ohio	0.0	1.8	2.9	3.4	3.8
South Carolina	0.0	0.8	3.8	4.9	5.4
Tennessee	0.0	0.0	0.2	0.3	0.3
Virginia	0.0	3.2	4.4	4.8	5.0
West Virginia	0.0	3.1	4.1	4.8	5.2
Panel C: State Tax Payments (Relative to KY)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Alabama	NA	2.3	1.2	1.1	1.0
Georgia	NA	2.3	1.5	1.4	1.4
Illinois	NA	1.7	0.9	0.8	0.7
Indiana	NA	2.2	1.0	0.9	0.9
Mississippi	NA	1.0	1.0	1.0	1.0
Missouri	NA	1.2	1.1	1.1	1.1
North Carolina	NA	2.5	1.7	1.7	1.7
Ohio	NA	1.3	0.9	1.0	1.0
South Carolina	NA	0.6	1.2	1.4	1.4
Tennessee	NA	0.0	0.1	0.1	0.1
Virginia	NA	2.2	1.4	1.4	1.3
West Virginia	NA	2.2	1.3	1.4	1.4

Notes: Estimates are from NBER and are based on calculations using the TAXSIM program.

Table A.4.2C: State Income Tax Burdens for Joint Filers with Two Dependents (2010)

Panel A: State Tax Payments					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0	699	2252	3524	4834
Alabama	0	776	1874	2819	3697
Georgia	0	483	1983	3483	4983
Illinois	-116	334	1228	1953	2678
Indiana	-216	310	1448	2281	3114
Mississippi	0	243	1397	2504	3611
Missouri	0	304	1633	2884	4160
North Carolina	-184	275	2107	4038	5915
Ohio	0	301	1276	2357	3592
South Carolina	0	0	1432	3182	4932
Tennessee	0	0	104	224	344
Virginia	0	17	2093	3493	4897
West Virginia	0	620	1819	3387	5012
Panel B: State Tax Payments (%Income)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0.0	2.8	4.5	4.7	4.8
Alabama	0.0	3.1	3.7	3.8	3.7
Georgia	0.0	1.9	4.0	4.6	5.0
Illinois	-1.2	1.3	2.5	2.6	2.7
Indiana	-2.2	1.2	2.9	3.0	3.1
Mississippi	0.0	1.0	2.8	3.3	3.6
Missouri	0.0	1.2	3.3	3.8	4.2
North Carolina	-1.8	1.1	4.2	5.4	5.9
Ohio	0.0	1.2	2.6	3.1	3.6
South Carolina	0.0	0.0	2.9	4.2	4.9
Tennessee	0.0	0.0	0.2	0.3	0.3
Virginia	0.0	0.1	4.2	4.7	4.9
West Virginia	0.0	2.5	3.6	4.5	5.0
Panel C: State Tax Payments (Relative to KY)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Alabama	NA	3.2	1.3	1.1	1.0
Georgia	NA	2.0	1.4	1.4	1.4
Illinois	NA	1.4	0.9	0.8	0.7
Indiana	NA	1.3	1.0	0.9	0.9
Mississippi	NA	1.0	1.0	1.0	1.0
Missouri	NA	1.3	1.2	1.2	1.2
North Carolina	NA	1.1	1.5	1.6	1.6
Ohio	NA	1.2	0.9	0.9	1.0
South Carolina	NA	0.0	1.0	1.3	1.4
Tennessee	NA	0.0	0.1	0.1	0.1
Virginia	NA	0.1	1.5	1.4	1.4
West Virginia	NA	2.6	1.3	1.4	1.4

Notes: Estimates are from NBER and are based on calculations using the TAXSIM program.

Table A.4.2D: State Income Tax Burdens for Elderly (>65) (2010)

Panel A: State Tax Payments					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0	1068	2373	3678	5027
Alabama	283	849	1654	2393	3131
Georgia	0	649	2029	3138	4368
Illinois	204	639	1364	2089	2814
Indiana	253	753	1601	2434	3267
Mississippi	34	636	1761	2886	4011
Missouri	-966	421	2026	3128	4435
North Carolina	254	1232	2982	4638	6417
Ohio	0	471	1473	2557	3850
South Carolina	0	0	1448	3103	4678
Tennessee	0	52	172	292	412
Virginia	0	376	2045	3543	4836
West Virginia	0	548	1711	3269	4894
Panel B: State Tax Payments (%Income)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Kentucky	0.0	4.3	4.7	4.9	5.0
Alabama	2.8	3.4	3.3	3.2	3.1
Georgia	0.0	2.6	4.1	4.2	4.4
Illinois	2.0	2.6	2.7	2.8	2.8
Indiana	2.5	3.0	3.2	3.2	3.3
Mississippi	0.3	2.5	3.5	3.8	4.0
Missouri	-9.7	1.7	4.1	4.2	4.4
North Carolina	2.5	4.9	6.0	6.2	6.4
Ohio	0.0	1.9	2.9	3.4	3.9
South Carolina	0.0	0.0	2.9	4.1	4.7
Tennessee	0.0	0.2	0.3	0.4	0.4
Virginia	0.0	1.5	4.1	4.7	4.8
West Virginia	0.0	2.2	3.4	4.4	4.9
Panel C: State Tax Payments (Relative to KY)					
Income (\$1,000)	\$ 10	\$ 25	\$ 50	\$ 75	\$ 100
Alabama	NA	1.3	0.9	0.8	0.8
Georgia	NA	1.0	1.2	1.1	1.1
Illinois	NA	1.0	0.8	0.7	0.7
Indiana	NA	1.2	0.9	0.8	0.8
Mississippi	NA	1.0	1.0	1.0	1.0
Missouri	NA	0.7	1.1	1.1	1.1
North Carolina	NA	1.9	1.7	1.6	1.6
Ohio	NA	0.7	0.8	0.9	1.0
South Carolina	NA	0.0	0.8	1.1	1.2
Tennessee	NA	0.1	0.1	0.1	0.1
Virginia	NA	0.6	1.2	1.2	1.2
West Virginia	NA	0.9	1.0	1.1	1.2

Notes: Estimates are from NBER and are based on calculations using the TAXSIM program.

Table A.5.1: Growth in Personal Income per Capita, Kentucky and Competitor States, (Constant 2011 \$)

Area	Annual Growth Rate (%)					Total Growth (%)	
	'69 - '11	'69-'80	'81-'90	'91-'00	'01-'11	'69 - '11	'01-'11
Kentucky	3.13	2.95	2.62	3.28	0.62	131.65 (9)	6.24 (7)
United States	2.89	2.48	2.77	3.22	0.70	121.50	7.02
Competitor States	3.07	2.65	3.04	3.25	0.61	128.92	6.12
Alabama	3.77	3.50	3.39	2.69	1.06	158.47 (3)	10.61 (3)
Georgia	3.19	2.65	3.92	3.66	-0.15	133.82 (8)	-1.54 (13)
Illinois	2.57	2.05	2.67	3.35	0.63	107.75 (10)	6.30 (6)
Indiana	2.29	2.05	2.53	3.29	0.15	96.37(13)	1.51 (12)
Mississippi	4.12	3.73	2.33	3.58	1.29	173.08 (1)	12.87 (2)
Missouri	2.82	2.38	2.50	3.15	0.69	118.56 (11)	6.89 (5)
North Carolina	3.38	2.72	4.00	3.67	0.21	142.13 (7)	2.06 (11)
Ohio	2.31	2.18	2.60	3.03	0.33	97.06 (12)	3.32 (10)
South Carolina	3.42	2.97	3.69	3.34	0.51	143.44 (6)	5.12 (9)
Tennessee	3.62	3.14	3.49	3.39	0.61	151.96 (4)	6.13 (8)
Virginia	3.88	3.39	3.43	3.04	1.05	163.06 (2)	10.54 (4)
West Virginia	3.45	3.61	2.12	2.66	1.38	144.80 (5)	13.78 (1)

Notes: The category competitor states is a weighted average of income of the competitor states.

Source: Authors' calculations and Bureau of Economic Analysis Regional Economic Information System (REIS) files.

Table A.5.2: Growth in Population, Kentucky and Competitor States

Area	Annual Growth Rate (%)					Total Growth (%)	
	'69 - '11	'69-'80	'81-'90	'91-'00	'01-'11	'69 - '11	'01-'11
Kentucky	0.87	1.33	0.07	0.98	0.74	36.63 (7)	7.40 (7)
United States	1.30	1.17	0.98	1.28	0.93	54.79	9.34
Competitor States	0.73	0.46	0.37	1.07	0.75	30.63	7.47
Alabama	0.94	1.22	0.37	0.96	0.75	39.61 (6)	7.50 (6)
Georgia	2.75	1.87	1.88	2.63	1.72	115.67 (1)	17.17 (2)
Illinois	0.39	0.33	0.01	0.83	0.30	16.58 (11)	3.05 (11)
Indiana	0.64	0.61	0.16	0.94	0.64	26.71 (10)	6.35 (9)
Mississippi	0.81	1.25	0.17	1.07	0.44	34.17 (8)	4.40 (10)
Missouri	0.70	0.55	0.44	0.94	0.66	29.54 (9)	6.55 (8)
North Carolina	2.19	1.57	1.32	2.12	1.76	91.94 (2)	17.62 (1)
Ohio	0.22	0.20	0.08	0.42	0.14	9.30 (12)	1.38 (13)
South Carolina	1.95	2.00	1.13	1.41	1.51	82.07 (3)	15.11 (3)
Tennessee	1.53	1.64	0.64	1.65	1.13	64.31 (5)	11.35 (5)
Virginia	1.80	1.49	1.58	1.42	1.25	75.48 (4)	12.48 (4)
West Virginia	0.15	1.07	-0.92	0.05	0.30	6.26 (13)	2.99 (12)

Notes: The category competitor states is a weighted average of income of the competitor states.

Source: Authors' calculations and Bureau of Economic Analysis Regional Economic Information System (REIS) files.

Table A.5.3: Private Earnings per Employee

Area	Annual Growth Rate (%)					Total Growth (%)	
	69-'10	'69-'80	'81-'90	'91-'00	01-'10	69-'10	01-'10
Kentucky	0.84	1.39	-0.05	2.09	-0.20	34.49	-1.77
United States	1.02	0.60	0.93	2.76	-0.15	41.64	-1.31
Competitor States	1.02	0.96	0.66	2.36	-0.08	41.70	-0.69
Alabama	1.11	1.52	0.73	1.60	0.01	45.55	0.09
Georgia	1.40	1.25	1.68	3.15	-0.88	57.33	-7.95
Illinois	0.91	0.74	0.95	2.56	-0.13	37.31	-1.21
Indiana	0.54	0.53	-0.13	2.02	-0.17	22.26	-1.54
Mississippi	1.21	1.65	0.35	2.08	0.04	49.41	0.34
Missouri	0.90	0.44	0.62	2.50	0.21	36.90	1.87
North Carolina	1.47	1.09	1.43	3.08	-0.23	60.40	-2.03
Ohio	0.51	0.37	0.24	1.77	-0.08	21.06	-0.70
South Carolina	1.06	1.22	1.17	2.23	-0.58	43.53	-5.24
Tennessee	1.47	1.17	1.01	2.66	0.20	60.27	1.79
Virginia	1.90	1.11	1.51	3.28	0.32	77.75	2.84
West Virginia	0.58	1.73	-0.67	0.61	0.50	23.83	4.52

Notes: The category competitor states is a weighted average of income of the competitor states.

Source: Authors' calculations and Bureau of Economic Analysis Regional Economic Information System (REIS) files.

Table A.9.1: Services Considered for Taxation and Estimate Revenue

	Establishments	Employees	Tax Revenue (2012 \$1,000)
Personal Services	2,282	16,359	70,120
Funeral homes and funeral services	367	2,220	18,770
Industrial launderers	38	2,144	12,080
Beauty salons	772	4,295	11,630
Drycleaning and laundry services (except coin-operated)	266	2,199	6,080
Linen supply	12	842	4,550
Parking lots and garages	97	799	3,720
Cemeteries and crematories	109	649	3,280
Other personal care services	205	1,202	2,710
Coin-operated laundries and drycleaners	129	561	2,170
Pet care (except veterinary) services	125	708	1,690
Diet and weight reducing centers	30	244	1,330
All other personal services	53	183	930
Barber shops	34	137	410
Photofinishing laboratories (except one-hour)	11	79	380
Nail salons	29	73	300
One-hour photofinishing	5	24	90
Automotive Repair and Services (non-commercial)	2,016	10,740	65,850
General automotive repair	872	3,958	27,640
Automotive body, paint, and interior repair and maintenance	456	2,476	17,940
Automotive oil change and lubrication shops	158	1,208	5,170
Car washes	191	1,836	4,900
Automotive glass replacement shops	101	421	3,310
Other automotive mechanical and electrical repair and maintenance	76	283	2,180
Automotive transmission repair	91	298	2,130
All other automotive repair and maintenance	25	120	1,680
Automotive exhaust system repair	46	140	900
Other Residential and Consumer Repair Services	236	1,491	5,450
Appliance repair and maintenance	40	182	1,330
Other personal and household goods repair and maintenance	87	318	1,710
Consumer electronics repair and maintenance	37	792	1,350
Home and garden equipment repair and maintenance	26	76	550
Reupholstery and furniture repair	35	109	460
Footwear and leather goods repair	11	14	50
Amusements and Recreational Services	705	8,286	34,990
Remediation services	48	1,158	11,470
Fitness and recreational sports centers	306	3,212	7,790
Golf courses and country clubs	144	1,793	6,960
All other amusement and recreation industries	101	736	3,360
Marinas	49	360	2,960
Bowling centers	57	1,027	2,450

Source: Authors' calculations based on Governor's Office for Economic Analysis and 2007 Economic Census, Census Bureau, Department of Commerce.