



SHOW-ME LIVING

ADVANCING LIBERTY WITH RESPONSIBILITY BY PROMOTING MARKET SOLUTIONS FOR MISSOURI PUBLIC POLICY



NUMBER 1

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SHOW-ME: THE TAXES

By Justin P. Hauke

EXECUTIVE SUMMARY

Many academic studies attempt to quantify the fiscal impact of taxes on Missouri households. Typically, these studies are theoretical, employing abstract economic models to determine how different types of taxes might affect household decision making.¹ This type of theoretical approach to taxation might be a useful endeavor for analyzing specific policy considerations, but it fails to capture the “human” side of the equation — that is, how much do actual Missouri households pay in state and local taxes each year, and how do such taxes differ across the state? Quantifying individual tax burdens is far more effective for understanding how state and local taxes impact individual wallets.

In order to satisfy this need, the Show-Me Institute has created “Show-Me: The Taxes” — an easy-to-use tool for Missourians who are interested in learning more about the state and local taxes they pay. This estimator estimates annual state and local taxes from user-supplied input

details. Perhaps more importantly, the estimator provides Missourians with a tool to compare their relative tax burdens across the state in order to facilitate better understanding of how taxes differ across communities.

In this report, I introduce the mechanics of the “Show-Me: The Taxes” estimator, and explain how it can be used to estimate a user’s tax burden. For the curious, an appendix provides full details about the calculations and assumptions used in the estimator. In the second half of this paper, I introduce five “hypothetical” households in order to help illustrate how much Missourians spend in taxes each year. Comparing these hypothetical households’ tax burdens across urban, suburban, and rural communities provides us with a better understanding of how taxes vary across the state and how such differences affect not only Missourians’ annual earnings, but also their lifetime wealth potential.

THE ESTIMATOR

The “Show-Me: The Taxes” estimator (hereafter, “estimator”) is

a Microsoft Excel-based document, easily downloadable from the Show-Me Institute’s website.² Missourians can use this estimator to estimate their total state and local tax burdens by supplying information about their current financial situations. Show-Me: The Taxes is intended for individual taxpayers, and does not compute any business or corporate taxes. Furthermore, the estimator’s income tax calculations are most appropriate for those earning primarily wage income; estimated tax results for Missourians who derive most of their household income from dividends, interest, or capital gains will be less accurate.³

For most Missouri households, the estimator will provide an accurate approximation of total Missouri tax burden.⁴ Maintaining the estimator’s functionality, however, required us to employ several broad tax assumptions.⁵ Consequently, the more complex the tax situation, the less accurate will be the estimator’s estimates. In addition, it should be noted that the estimator is intended for educational purposes only, and should not be used in the preparation

of any federal or state tax form. In order to protect our users' privacy, the Show-Me Institute does not store or maintain any information entered or collected by the estimator.

Using the Estimator

Once the estimator has been downloaded from the Show-Me Institute's website, it may be opened on a user's computer in Microsoft Excel. Figure 1 presents the estimator's default layout.

The estimator provides tax estimates for the following types of Missouri state and local taxes: sales taxes, personal property taxes, income taxes, earnings taxes, residential property taxes, utility taxes, gasoline taxes and "vice" taxes (taxes on tobacco products). Additional taxes are not considered.⁷ As a user enters additional information, the estimator automatically adjusts its estimate of overall tax burden. The bottom table, "Annual State and Local Taxes," presents an estimate of annual tax burden (both in dollars and as a percentage of gross income, where applicable) for each tax category. In addition, the estimator reports a user's Missouri "Tax Freedom Day," defined as the day on which an individual's cumulative gross pay to date matches their annual state and local tax obligation.⁹ For example, a "Tax Freedom Day" of March 15 would imply that it takes you from January 1 until March 15 before you begin to earn money for yourself, instead of the government.

Figure 1: "Show-Me: The Taxes" Template

SHOW-ME: "THE TAXES"		
Welcome to the Show-Me Institute's state and local tax estimator. This document can be used to estimate a Missouri household's state and local tax burden.		
Please note that in order to protect our user's privacy, the Show-Me Institute does NOT store, maintain, or in any way save any information entered or collected by this document.		
Geographic Questions (Please select from the drop-down menus in the cells to the right)		
In which county do you live?		ADAIR
In which city do you live?		BRASHEAR
In which city do you work?		BRASHEAR
Which school district do you live in?		ADAIR CO. R-I
Home Ownership Questions (If NA enter "0")		
Market Value of Home		\$0.00
Outstanding Mortgage Principle Balance		\$0.00
Mortgage Interest Rate		0.00%
Personal Property Questions (If NA enter "0")		
Market Value of All Taxable Personal Property (cars, boats, etc.)		\$0.00
Income Tax Questions:		
Gross Household Income (wages, interest, and dividends)		\$0.00
INCOME FILING STATUS (CHECK ONLY ONE BOX)	Single	<input type="checkbox"/>
	Married Filing Jointly	<input type="checkbox"/>
	Married Filing Separately	<input type="checkbox"/>
	Married (Spouse Not Filing)	<input type="checkbox"/>
	Head of Household	<input type="checkbox"/>
	Qualifying Widow(er)	<input type="checkbox"/>
EXEMPTIONS (CHECK BOX IF YES)		
	Are you over 65 years old?	<input type="checkbox"/>
	Is your spouse over 65 years old?	<input type="checkbox"/>
	Are you legally blind/disabled?	<input type="checkbox"/>
	Is your spouse legally blind/disabled?	<input type="checkbox"/>
Number of Children or Other Claimed Dependents (Do not include spouse)		0
Contributions to Qualified Tax Savings Plans (e.g., IRAs)		\$0.00
Other Income Tax Adjustments (If NA enter "0")		
Total Annual Student Loan Interest		\$0.00
Total Annual Tuition and Other Educational Fees		\$0.00
Total Annual Health Savings Account (HSA) Contributions		\$0.00
Total Annual Charitable Contributions		\$0.00
Sales Tax Questions		
Estimated Annual Household Consumption (Note: If unsure, enter 30% of gross income)		\$0.00
Utilities Tax Questions		
Average Monthly Utility Bill (total electricity, water, phone, gas, Internet, sewer)		\$0.00
Gasoline Tax Questions		
Average MPG of Vehicles Driven		0
Average Annual Miles Driven		0
Misc. Questions		
Packs of cigarettes smoked per week?		0
Annual State and Local Taxes		
State and Local Sales Tax ^{1,7}	Effective Tax Rate	Dollars in Taxes
	6.60%	\$0.00
Personal Property Tax ^{2,7}	5.87%	\$0.00
State Income Tax ³	0.00%	\$0.00
City Earnings Tax ⁴	0.00%	\$0.00
Real Estate Property Tax ^{2,7}	6.89%	\$0.00
Utility Tax ⁵	5.00%	\$0.00
Gasoline Tax	17.6 cents/gallon	\$0.00
Tobacco Tax ⁶	0.00%	\$0.00
Total State and Local Taxes		\$0.00
Effective Missouri Tax Rate	0.00%	
Days Worked to Pay Your Annual Missouri and Local Taxes		
Your Tax "FREEDOM" Day		January 01

Source: Show-Me Institute, "Show-Me: The Taxes" estimator

Figure 2: Geographic Menu Selection Questions

7	Geographic Questions (Please select from the drop-down menus in the cells to the right)
8	In which county do you live? ADAI
9	In which city do you live?
10	In which city do you work?
11	In which school district do you live in?
12	Home Ownership Questions (If N/A enter "0")
13	Market Value of Home
14	Outstanding Mortgage Principle Balance

ADAIR
 ANDREW
 ATCHISON
 AUDRAIN
 BARRY
 BARTON
 BATES
 BENTON

Source: Show-Me Institute, "Show-Me: The Taxes" estimator

Inputs

The first panel of the estimator, beginning in row 7, contains geographical questions. From the drop-down menus in the adjacent yellow-highlighted cells, users can select the counties and cities in which they live and work, and the school districts to which their homes are zoned. Figure 2 provides an example of the county selection menu option.¹¹

The next panel of cells (beginning in row 12) concerns property ownership and estimated market value details (for both residential and personal property). The first row (row 13) requires an estimate of the fair market value of a user's home (that is, the price at which a user believes that the home could be sold in the market, or the value at which it is appraised). If the user doesn't own a home, the value defaults to \$0.¹² The next several rows refer to the details of the user's home mortgage, if applicable. Again, users without a mortgage should enter a value of \$0 for these fields. In row 17, users are asked to enter the value of their taxable personal property, which includes all titled vehicles, boats, airplanes, and farm equipment unless otherwise noted as tax-exempt.

The following panel (beginning in row 19) asks users for their total

household income (including income earned by dependents, if applicable). The model assumes that all income is treated identically for tax purposes. This assumption is clearly inaccurate in the real world, but is valid in estimations for most users who are either: a) employed; or, b) receive most of their income from wages (rather than dividends, interest, or capital gains). In the row labeled "Gross Household Income," users should enter their gross income as reported on, for example, their federal W-2 forms.

Next, users should select their tax filing status and any non-standard federal/state income exemptions. Users should check the box next to the tax filing status that best describes their current tax situation in the boxes in rows 20-25 (please only check one box). In rows 27-30, users should

check the boxes for each exemption that applies to them. An example of these choices is illustrated in Figure 3.

Rows 31-37 provide additional income tax adjustment questions. In row 31, users should enter the number of qualified dependents that they may claim for tax purposes (not including the user and his/her spouse). For example, a married couple with two children would enter "2" in cell C31. Row 32 adjusts gross income for contributions to qualified tax savings plan, for example, contributions to tax-deferred IRA plans. Annual limits are imposed in the final tax calculation based on income limitations.

Rows 34-37 require information on other common taxable deductions, such as educational and charitable expenses. Users should enter their total student loan interest (if applicable) in row 34, and any tuition or educational expenses in row 35 (the estimator will compute deduction limits). If users have contributed to federal health savings accounts (HSA), they should enter their total contribution in row 36. Lastly, users should enter the sum of their annual charitable donations in row 37.

Figure 3: Income Tax Questions

INCOME FILING STATUS (CHECK ONLY ONE BOX)	Single	<input type="checkbox"/>
	Married Filing Jointly	<input type="checkbox"/>
	Married Filing Separately	<input type="checkbox"/>
	Married (Spouse Not Filing)	<input type="checkbox"/>
	Head of Household	<input type="checkbox"/>
	Qualifying Widow(er)	<input type="checkbox"/>
EXEMPTIONS (CHECK BOX IF YES)	Are you over 65 years old?	<input type="checkbox"/>
	Is your spouse over 65 years old?	<input type="checkbox"/>
	Are you legally blind/disabled?	<input type="checkbox"/>
	Is your spouse legally blind/disabled?	<input type="checkbox"/>

Source: Show-Me Institute, "Show-Me: The Taxes" estimator

The final panels of the estimator collect information on a user's consumption habits. Users are asked to approximate their annual taxable consumption, their gross monthly utility bills, their annual driving habits, and their smoking habits. For users unsure of their total taxable consumption (see row 39), a rough approximation can be calculated by reporting 30 percent of a household's gross income (for example, if a household had a gross income of \$30,000, then its total annual taxable consumption would likely be around \$9,000).¹³ Estimates of a user's annual vehicle travel (total miles driven and average miles per gallon) and the amount of tobacco products consumed per year (if applicable) are also required (see rows 43-46).

Outputs

The estimator has several important tax outputs, which are located in a table at the bottom of the document. This table provides a snapshot summary of a user's state and local tax burden and calculates the user's Missouri "Tax Freedom Day," as described above.

Figure 4 shows the estimator's tax estimate output. In the second column, the tax rates for sales, property, utilities, gasoline, and tobacco are expressed at the rate levied by the user's selected tax jurisdiction (or the state average — in italics — if local tax rate data is unavailable).¹⁴ Rates for state income taxes and city earnings taxes are expressed as a percentage of the

user's gross income. The third column presents the actual dollar amount of taxes paid for each type of tax. The final rows report the number of days required to pay the user's total annual Missouri state and local tax bill and the user's corresponding Missouri "Tax Freedom Day."

HOUSEHOLDS

This section of the report introduces five hypothetical Missouri households in order to demonstrate how Missouri tax burdens differ across the state. In other words, how does a household's geography affect its tax burden, all else being equal? To provide a comprehensive picture of Missouri taxes, I compare each household's annual taxes across five different cities: Saint Louis, Kansas City, Maplewood (Saint Louis County), Grain Valley (Jackson County), and Cape Girardeau — plus the unweighted state average. Using these jurisdictions as examples allows for tax comparisons across Missouri's

two largest cities, two of its suburban districts, and a rural county. The following subsections describe each household and include discussions of each area's annual taxes and their impact on lifetime earnings potential.

The 20-Something-Year-Old

"Joe Young" is a 25-year-old college graduate with an annual income of \$30,000 — near the state average for his demographic. Joe graduated three years ago from Truman State University with \$8,000 in total outstanding student loans (which he used to help finance his extremely versatile political science degree). Joe was eligible for federal Stafford loans when he applied for financial aid, so the interest on his remaining principal balance is capped at 6.5 percent per year, the current prevailing rate. Joe drives a 1999 Dodge Stratus, valued at \$4,000, and rents a two-bedroom apartment, which he shares with a college roommate. His share of the utility bill

Figure 4: Tax Estimate Output

Annual State and Local Taxes	Effective Tax Rate	Dollars in Taxes
State and Local Sales Tax ^{1,7}	6.60%	\$0.00
Personal Property Tax ^{2,7}	5.87%	\$0.00
State Income Tax ³	0.00%	\$0.00
City Earnings Tax ⁴	0.00%	\$0.00
Real Estate Property Tax ^{2,7}	6.89%	\$0.00
Utility Tax ⁵	5.00%	\$0.00
Gasoline Tax	17.6 cents/gallon	\$0.00
Tobacco Tax ⁶	0.00%	\$0.00
Total State and Local Taxes		\$0.00
Effective Missouri Tax Rate	0.00%	
Days Worked to Pay Your Annual Missouri and Local Taxes		0
Your Tax "FREEDOM" Day		January 01

Source: Show-Me Institute, "Show-Me: The Taxes" estimator

(which includes electricity, natural gas, high-speed Internet, and a cell phone bill; water and sewer expenses are covered by his apartment complex and factored into his rental payments) averages \$150 per month. Joe's car generally averages 25 mpg (around town), and he drives it 12,000 miles per year — mostly to and from work, and on the occasional summer road trip.

Unfortunately, Joe is a cigarette smoker (although he's trying to quit), and currently smokes two packs of cigarettes per week. Joe recognizes the value of savings, but he currently manages to save only \$1,000 per year, which his father suggested he use to open a traditional IRA account. After paying his monthly bills, Joe has enough left over to spend on groceries, entertainment, and socializing with his friends. He estimates his taxable consumption to average near \$8,000 per year.

The Nuclear Family

"Mr. and Mrs. Traditional" are in their mid-30s, married, and have two young children — a boy and a girl. Mr. Traditional works for an insurance company and has an annual income of \$50,000 (after contributing pre-tax earnings to his 401k, up to his employer's 6-percent salary match). His wife, Mrs. Traditional, is an elementary school teacher in a nearby school district, who has an annual salary of \$30,000.

Five years ago, the Traditionals purchased their first home for \$150,000, with a down payment of

\$20,000 (net total of closing costs, private mortgage insurance, and other fees). Homes in their neighborhood have been selling well recently, however, and their house was most recently appraised at \$165,000. This increase in equity provided the Traditionals with the opportunity to refinance their mortgage with better terms, and so their remaining \$115,000 balance is in a traditional 30-year mortgage with a fixed rate of 6.3 percent.

Both Mr. and Mrs. Traditional attended college, where they accumulated student loan debt. The Traditionals were savvy students, however, and were able to finance much of their college educations through scholarships (in fact, Mrs. Traditional's tuition was covered by a non-profit grant program that trains teachers to teach in inner-city school districts). The couple's total student loan balance is \$22,000, currently subject to 6.5-percent interest.

Mrs. Traditional recently traded in her 1998 Toyota Corolla for a 2001 Honda Odyssey (even though she swore she would never buy a minivan), while Mr. Traditional continues to drive the 1995 Ford Taurus that he's had since he graduated college. The total market value of the couple's vehicles is approximately \$13,000. They drive an average of 16,000 miles per year between them, mostly from taking their kids to and from school and other activities, at an average rate of 23 mpg.

This year, the Traditionals are trying to be better savers, managing

to save \$3,000 in each a traditional and a Roth IRA (they're hedging their future tax burden), plus an additional \$1,500 in each of their children's Missouri MOST education funds. The Traditionals had an estimated \$300-per-month average household utility bill this year, and they spent nearly \$25,000 on taxable consumption goods throughout the year.

The Single Working Mother

"Ms. Strong" is a 29-year-old single mother of one (a boy). Ms. Strong managed to earn an associate's degree in paralegal studies on a part-time basis, and currently works at a law firm with an annual salary of \$26,000 per year. Ms. Strong owns a small two-bedroom town home appraised at \$85,000, which she purchased with a down payment funded by an inheritance from her grandmother. Ms. Strong's credit is weak, but she qualified for an adjustable interest rate of 7 percent on her \$75,000 mortgage. Ms. Strong has no student loan debt, and owns a 1992 Acura Integra valued at \$1,500. She drives approximately 8,000 miles per year at an estimated 28 mpg. Her utilities average \$180 per month, and she has no significant savings (even though she hopes to one day have enough to send her son to college). Ms. Strong estimates that she spends approximately \$10,000 per year in taxable consumption.

Figure 5: Calculated Annual State and Local Tax Burden by Household

Geographic Location		Household				
County	City	Joe Young	The Traditionals	Ms. Strong	The Goldens	Median Missourian
Saint Louis City	Saint Louis	\$ 2,127.37	\$ 8,554.25	\$ 2,674.87	\$ 3,809.48	\$ 4,306.88
Saint Louis County	Maplewood	\$ 1,857.89	\$ 7,847.57	\$ 2,416.53	\$ 3,516.87	\$ 3,941.46
Jackson	Kansas City	\$ 2,160.69	\$ 9,408.20	\$ 2,998.50	\$ 4,315.22	\$ 4,727.33
Jackson	Grain Valley	\$ 1,849.00	\$ 8,691.27	\$ 2,745.37	\$ 4,001.47	\$ 4,331.22
Cape Girardeau	Cape Girardeau	\$ 1,804.56	\$ 7,285.64	\$ 2,213.17	\$ 3,172.14	\$ 3,646.94
State Avg.	State Avg.	\$ 1,729.30	\$ 7,640.64	\$ 2,348.17	\$ 3,344.41	\$ 3,754.74

Source: Missouri Department of Revenue; Author's Calculations

The Retired Couple

“Mr. and Mrs. Golden” are in their early 70s and have been retired for nearly 10 years. Mr. Golden’s brother was a financial planner who helped the Goldens to accumulate a sizable nest egg to live on during their retirement years. The Goldens estimate that they earn \$30,000 on average in taxable earnings from their retirement income, which has been a big help in paying some of Mrs. Golden’s recent medical bills (Mrs. Golden is now legally classified as “disabled”). The couple paid off their mortgage several years before they retired, and currently have no debt. Their small two-bedroom home is estimated to be worth \$110,000, although their current household income has placed them above the limit for any property tax credits or abatements. Mr. Golden drives a 1988 Cadillac, while Mrs. Golden still maintains the 1992 Lincoln that she’s driven since it was new. Their most recent tax appraisal valued the two vehicles at \$6,500. While the cars are gas guzzlers, the Goldens don’t do much driving these days. They estimate that they average a combined 6,000 miles per year

of driving at a rate of 20 mpg. The Goldens estimate their utility bills to be approximately \$180 per month, and they spend nearly \$18,000 per year on taxable consumption — mostly on travel.

The Median Missourian

The “Median Family” is pretty average by Missouri standards. In fact, the household’s current demographics are at the exact median point for the state.¹⁵ The young married couple has a total household income of \$37,934 and 1 child. Their home is worth \$89,900 (last appraised in 2000), with an outstanding mortgage principal of \$88,270 financed at a rate of 5.96 percent. The Medians own two cars, each appraised at \$3,000. Their cars get 17 mpg and they drive each car 12,000 miles per year. The Medians’ combined student loan debt (only one of the Medians attended college) is \$2,539, on which the couple pays interest at a rate of 6.8 percent. The household smokes one pack of cigarettes per week, and has total taxable consumption of \$11,000 (50 percent of after-tax total consumption).

HOUSEHOLD TAXES: COMPARATIVE EXAMPLES

So, how much do the hypothetical households described above pay in state and local taxes each year? Figure 5 provides the figures for total annual state and local taxes paid by each household during 2007, across each community described. The numbers reveal that there is considerable tax variability across Missouri. For example, the difference between the annual state and local taxes that would be paid by the “Median Missourian” household in either Kansas City or Cape Girardeau averages more than \$1,000 per year. In this section of this report, I describe how taxes differ for the other four households described above. I also describe how these annual tax differences affect the lifetime earnings potential of the members of each household.

The 20-Something-Year-Old

Figure 6 provides estimates of Joe’s annual state and local tax

burden (in dollars), based on the demographic characteristics described above. Joe’s annual tax burden would be highest — at \$2,155.49 — if he lived in Kansas City (Jackson County), and would be lowest — at \$1,804.56 — if he lived in Cape Girardeau, assuming his financial situation would not otherwise change as he moved across the state.¹⁶ While this \$350.93 annual tax difference may not seem dramatic (especially considering that average wages in urban districts are considerably higher than those in rural districts), the most striking difference is the tax disparity between urban and suburban jurisdictions.

For example, while both Kansas City and Saint Louis have (in general) lower sales and property tax rates than many of their suburban counterparts, the fact that both cities levy a 1-percent earnings tax on gross income, while Grain Valley and

Maplewood do not, has a dramatic effect on Joe’s annual tax burden. In this example, despite the fact that a person living in Saint Louis or Maplewood would have access to the same job opportunities (and, presumably, the same standard of living), a household similar to Joe’s could save \$274.68 each year just by choosing to live in Maplewood rather than Saint Louis. (Note that in this example and elsewhere below, I assume that those living in households outside Saint Louis or Kansas City do not work in those cities either.)

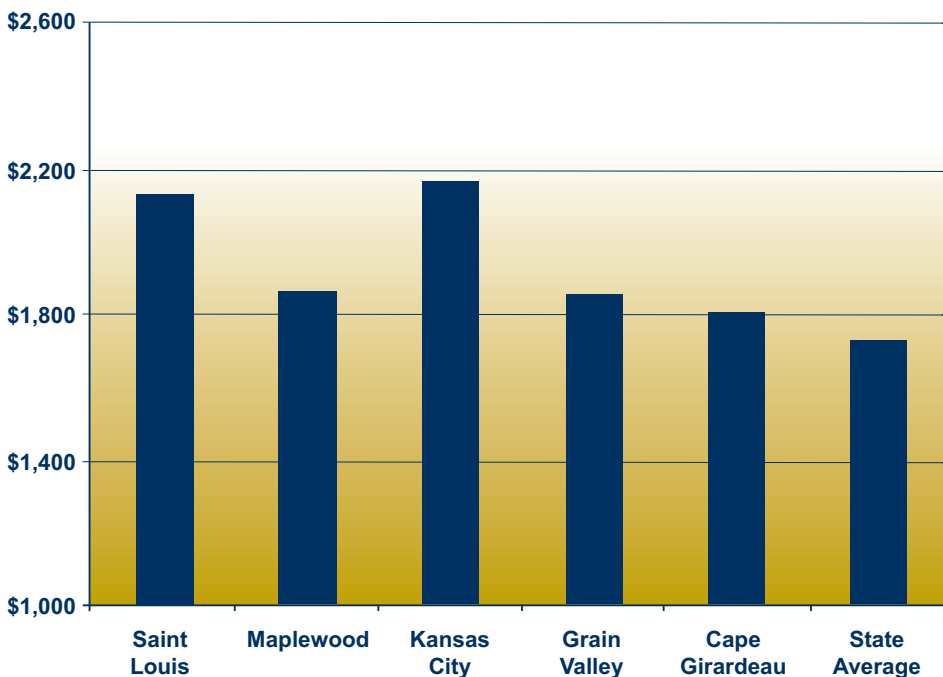
This difference becomes even more dramatic if we consider the effect that this tax difference would have on Joe’s lifetime earnings. Imagine that Joe’s financial situation remained unchanged during the next 40 years (for illustrative purposes only). How would the effect of

living in Saint Louis versus living in Maplewood affect Joe’s lifetime earnings potential? If Joe’s income and consumption habits remained unchanged during the next 40 years, but he invested each year’s annual tax savings from living in Maplewood instead of Saint Louis, how much larger would Joe’s expected retirement savings be? Figure 7 provides the projected growth of Joe’s annual tax savings during the next 40 years.¹⁷ Upon retirement at age 65, Joe might expect his wealth to be \$67,000 greater had he lived in Maplewood rather than Saint Louis. When we consider the fact that Joe’s real income would surely rise during the next 40 years as he gains more work experience and skills, it’s clear that the difference in his taxes across the two cities would have a dramatic impact on his lifetime earnings.

The Nuclear Family

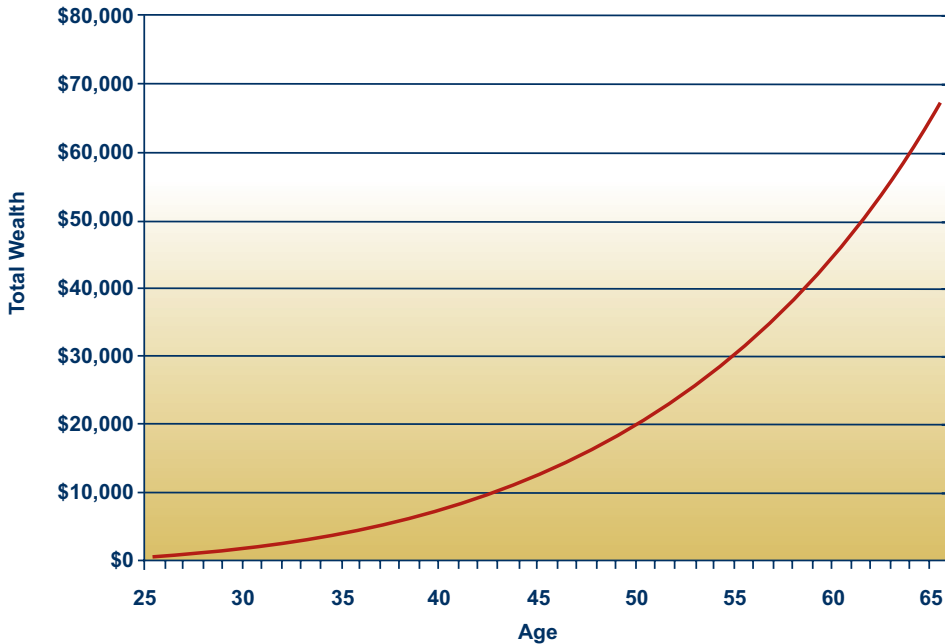
Figure 8 provides a bar graph of the Traditionals’ annual state and local tax burden across the state. The large spikes for Saint Louis and Kansas City, compared to other cities, are primarily driven by those cities’ 1-percent earnings tax levy. This 1-percent tax has a considerable impact on after-tax earnings as household income increases. For example, Figure 8 suggests that the Traditionals could save nearly \$700 annually just by moving from Kansas City (Jackson County) to Grain Valley (also Jackson County, which does not levy an earnings tax, presuming neither spouse works within Kansas City).

Figure 6: “Joe Young” — Comparative Tax Burden



Source: Missouri Department of Revenue; Author’s Calculations

Figure 7: “Joe Young” — Lifetime Earnings Potential



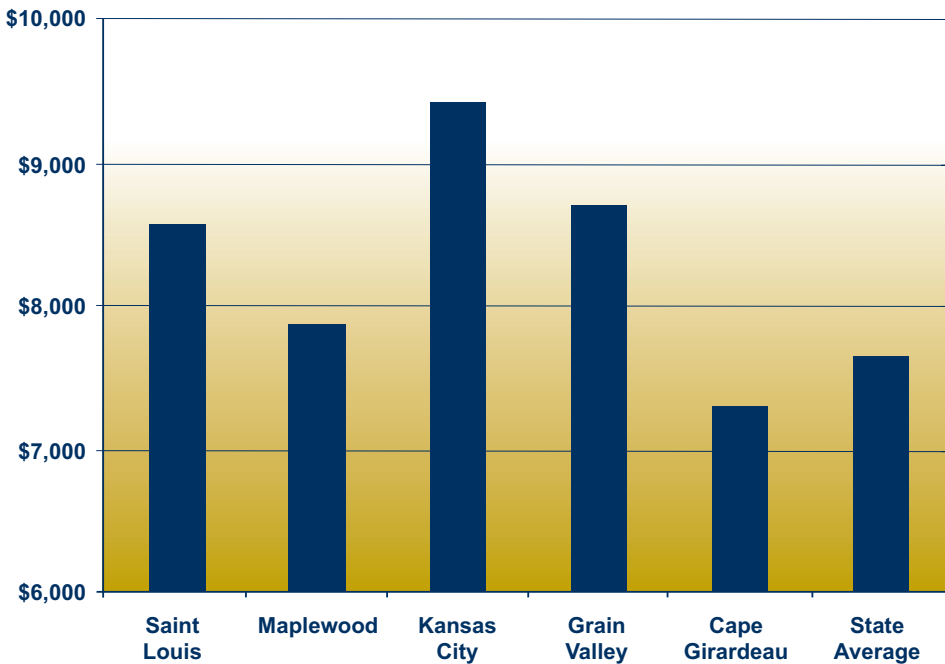
Source: S&P 500 Historical Returns, and Crystal Ball® Simulations

Again, the effect of \$700 on annual tax savings is even more dramatic when we consider its impact on lifetime earnings potential. If the Traditionals invested their \$700 in annual tax savings in a well-diversified portfolio of stocks and bonds (for simplicity, let’s assume a 70/30 weighting of stocks and bonds, respectively) during the next 30 years, they might expect to accumulate an additional \$62,407 of lifetime wealth!¹⁸ Of course, this calculation is oversimplistic, ignoring the long-term effects of inflation and changing income/tax status. But it is illustrative of an important fact about Missouri taxes — where you choose to live has a big impact on how much you sacrifice for taxes in the long run.

The Single Working Mother

We now return to Ms. Strong, who was struggling to save money for her young son’s education. Similar to the households described above, Ms. Strong would pay more in taxes each year by living in Saint Louis or Kansas City than in the rest of the state (see Figure 9). Like Joe, Ms. Strong could save more than \$200 per year in taxes by living in Maplewood rather than Saint Louis. Such an increase in annual tax savings could grow to nearly \$10,000 during the next 20 years, enough to fund nearly two years of her son’s tuition at the University of Missouri–Saint Louis.¹⁹ Ms. Strong’s household income would undoubtedly leave her son eligible for significant financial aid, suggesting that Ms. Strong could fund her son’s

Figure 8: “The Traditionals” — Comparative Tax Burden



Source: Missouri Department of Revenue; Author’s Calculations

entire college education simply by moving a few miles down the road.

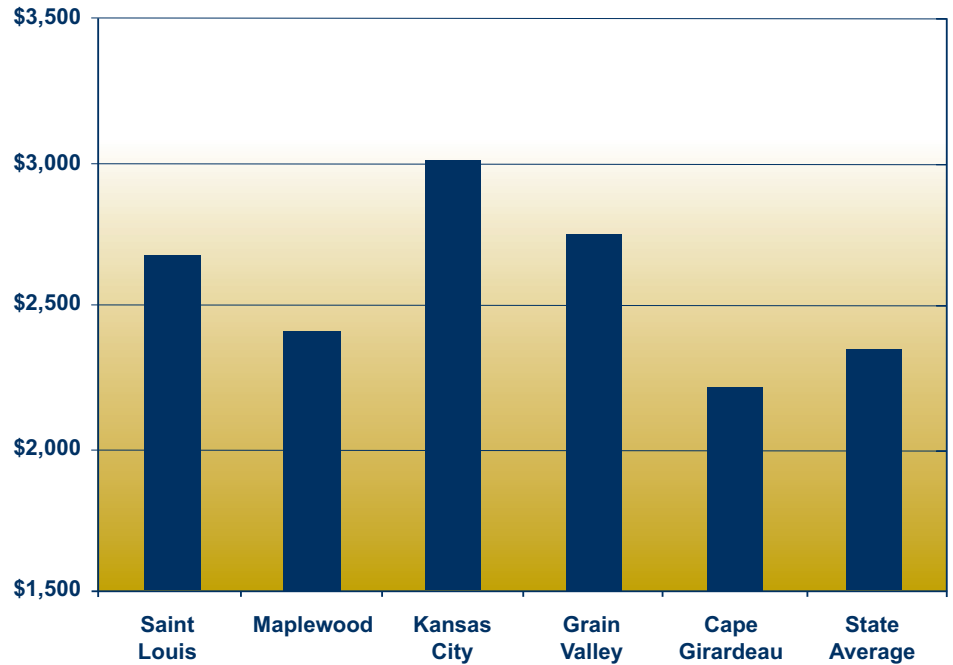
The Retired Couple

Lastly, we return to Mr. and Mrs. Golden, our newly retired Missouri couple. Figure 10 provides estimates of the Golden's annual state and local tax burdens in communities across the state. The disparity in annual taxes is dramatic, particularly between urban and rural communities.²⁰ The estimator suggests that the Golden's could save an incredible \$1,143 in annual state and local taxes by living in "rural" Cape Girardeau instead of "urban" Kansas City (Jackson County). The financial attractiveness of "rural communities" for retiree living has been well publicized in the financial press.²¹ Lower taxes are only one of the myriad benefits of country living for retired households.

Consider the Golden's annual tax savings from another perspective. Presumably, the Golden's aren't interested in growing their long-term wealth (they're already retired, after all), but rather are focused on preserving their savings throughout their golden years. Considering that average life expectancy in the United States was nearly 80 years in 2007, the Golden's may need to preserve their retirement income throughout the next 20 years or longer.

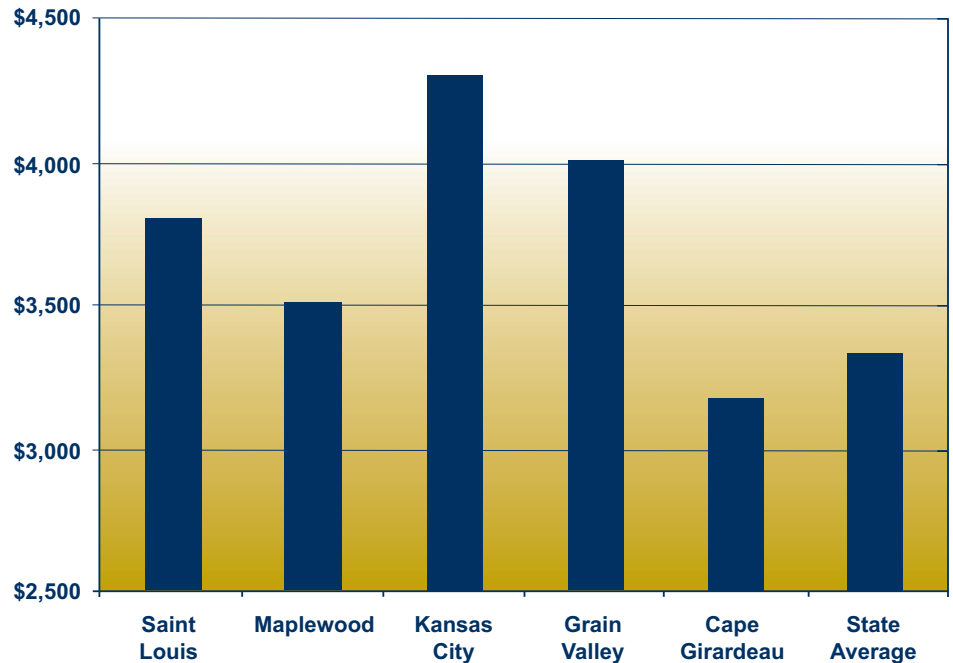
If the Golden's decided to move from Kansas City to retire in Cape Girardeau, and then invested their annual tax savings into risk-free annuities each year (beginning with a 20-year annuity during the first year), their monthly income would

Figure 9: "Ms. Strong" — Comparative Tax Burden



Source: Missouri Department of Revenue; Author's Calculations

Figure 10: "The Golden's" — Comparative Tax Burden



Source: Missouri Department of Revenue; Author's Calculations

increase by \$94.14 without ever dipping into their original retirement savings.²² Imagine the impact of an additional \$94.14 in cash each month for a retired couple living on a fixed income. The increase could be used to help defray the cost of prescription drugs and other medical expenses, or it could be used to help fund their grandchildren's education. Although this example is hypothetical, the impact of taxes across the state surely has an effect on this household's quality of life.

CONCLUSIONS

This paper introduced the “Show-Me: The Taxes” tax estimator, a tool for estimating Missouri state and local tax burdens. Missourians now have a tool to help better understand the cost of state and local taxes, and to see how taxes differ across the state. By introducing “hypothetical” households, this paper has shown how incremental differences in local tax rates can have a major impact on a household's lifetime earnings. In more extreme examples, these differences can amount to tens of thousands of dollars during the course of an individual's lifetime. These examples illustrate the importance of local tax policy, and the need to critically evaluate government spending — particularly at the local level. The Show-Me Institute provides a litany of policy recommendations through our publication series, demonstrating ways in which both the state and local governments can save taxpayer dollars through consolidation, increased efficiency, and business-friendly policies.

The “Show-Me: The Taxes” tax estimator provides a tool from which Missourians can better quantify these benefits.

APPENDIX: ASSUMPTIONS FOR “SHOW-ME: THE TAXES”

This appendix describes the tax calculations and assumptions by which the estimator operates.

State and Local Sales Tax Calculation:²³

Calculation:

Total consumption (independent of qualified savings, medical payments, interest payments, online purchases when applicable, and other exemptions) are taxed at the combined state, county, and municipal sales tax rate, levied as a percentage of total taxable consumption.²⁴

Assumptions:

- All taxable goods are taxed at the general sales tax rate, regardless of their use or purchase origin. Many goods, such as certain food products, are taxed at a lower rate than the general use tax rate. This means that the sales tax estimates produced by the estimator should be viewed as an upper bound for actual annual sales taxes (assuming that the user's consumption estimate is valid).
- All purchased taxable goods are purchased in the user's city of residence.
- Municipal sales taxes are taxed at the general municipal level (i.e., ignoring the effect of special tax “business zones”).
- Alcohol taxes are ignored when calculating sales tax for alcoholic beverages. Current alcohol tax rates are \$2 per gallon for liquor, \$0.056 per gallon for beer, and \$0.42 per gallon for wine — among the lowest in the country.²⁵

Personal and Real Estate Property Tax Calculations:²⁶

Calculation:

Personal and real estate property values are assessed at the state level (33.3 and

19 percent of fair market value for personal property and real property, respectively). Every \$100 of assessed property value is then multiplied by the sum of all state, county, and local property tax rates.

Assumptions:

- Local property taxes are levied at the average property tax rate for the county or municipality (and therefore ignore the individual effect of hospital, library, sewer, fire, and other local property zones).
- Property tax abatement zones are not considered.
- If a local property tax rate is not available, the estimator uses the state average, as sourced in the bullet below.
- The estimator does not consider the Missouri Property Tax Credit, available to low-income seniors and disabled Missourians.
- For jurisdictions without data, real and personal property are taxed at the state average of 6.89 and 5.87 dollars per \$100 of assessed value.²⁷
- The estimator includes an additional \$0.01 property tax levy per \$100 of assessed value, as described by Missouri Proposition C.²⁸

State Income Tax Calculation:

Calculation:

Missouri state income taxes are computed from federal adjusted gross income, as described by the Internal Revenue Service.²⁹

Federal taxes are computed from adjusted gross income by subtracting qualified tax-savings plan deductions (up to \$5,000 during 2007) and other income adjustments (such as qualified tuition costs, student loan interest, and health savings account contributions) from gross income. Standard or itemized deductions, plus any personal exemptions, are then subtracted from adjusted gross income to arrive at federal taxable income. Lastly, child tax credits are subtracted from the total tax paid on federal taxable income.

Missouri income taxes are computed from federal adjusted gross income, less the taxpayer's standard or itemized deductions, whichever is larger. Itemized deductions include all federal itemized deductions, less any state income taxes withheld by the individual's employer, while standard deductions vary by filing status. Federal income taxes (not to exceed \$5,000 for single — or \$10,000 for joint — tax filers), Missouri exceptions and dependent exceptions are then subtracted

to arrive at Missouri taxable income, which is taxed at the graduated rate described by the Missouri Department of Revenue.³⁰

General Income Tax Assumptions:

- The estimator treats all taxable income identically. Therefore, dividends, capital gains, and interest income are taxed at the same rate as traditional wage income.
- The estimator assumes all taxpayers are subject to income taxes. The Earned Income Tax credit and the Alternative Minimum Tax are not considered.
- No tax credits are awarded for particular investment behavior, charitable contributions, educator expenses, or MOST contributions. The only federal (and state) tax credit used here is the child tax credit.
- All taxpayers are assumed to be employed rather than self-employed.
- The federal income tax estimator deducts state income taxes from adjusted gross income, rather than the larger of total state sales or income taxes. Most taxpayers will choose this option unless they purchased a large item subject to sales tax during the previous tax year.
- These assumptions will create tax estimate distortions for the following types of taxpayers: a) Those with significant earnings from non-wage income; b) Those who are self-employed; c) Those who claim a significant amount of non-standard tax credits and exemptions.

Assumptions for Computing Federal Adjusted Gross Income:

- The estimator does not consider the educator expense deduction.
- The estimator ignores adjustments to deductions for health savings accounts, tuition, and student loan interest (such as the source of funding and whether they were federally insured, etc.). These requirements are ignored in the model.
- The estimator assumes that tax filers are eligible to deduct IRA contributions from their taxable income, regardless of age or income. In addition, the model does not consider “catch-up” provisions. Contributions to 401k and federal thrift plans are not reported as taxable income, and therefore are not deducted by the estimator. The estimator assumes taxpayers may only deduct \$4,000 from qualified IRA plans (i.e., the level allowed during 2007).³¹
- Student Loan Interest Deduction: The estimator assumes that filers are eligible

(that is, that they have an adjusted gross income less than the eligibility cutoff and that student loan interest does not exceed the \$2,500 annual cap) for the student loan interest deduction. The model also assumes a dollar-for-dollar tax credit, despite the fact that higher-income individuals may receive less than a dollar-for-dollar match.

Itemized Vs. Standard Deduction Assumptions:

- The only federal itemized deductions a user can claim are Missouri income taxes, real estate taxes, personal property taxes, and mortgage interest. The estimator takes either the standard deduction or the itemized deduction, whichever is larger.
- The state income tax deduction is the raw income tax that was withheld on all income reported on a W2 form.

Federal Payroll Tax Calculation:³²

Calculation:

Social Security and Medicare taxes are calculated at 6.2 percent and 1.45 percent of gross income (plus the employer match). The social security income eligibility ceiling is \$97,500; there is no income ceiling for Medicare.

Assumptions:

- The estimator computes payroll taxes on gross income, regardless of source.
- The estimator does not include any filing status exemptions.
- The income eligibility limits are based on taxes for tax year 2007.
- Payroll taxes do not affect any other Missouri state or local tax calculation.

Earnings Tax Calculation:³³

Calculation:

City earnings taxes are assessed on all residents living or working within the city limits of Saint Louis and Kansas City. The earnings tax is a 1-percent income tax on gross wage earnings, irrespective of federal or state exemptions.

Assumptions:

- The estimator assumes that all gross income is subject to the city earnings tax.
- An earnings tax is calculated only if users select either Kansas City or Saint Louis as their city of residence, or as the city in which they are employed.

Utilities Tax Calculation:³⁴

Calculation:

Missouri municipalities impose a “Gross Receipts Tax” on utilities (water, sewer, natural gas, electricity, Internet, and telephone). The tax rates on these utilities vary by municipality, but average near 5 percent across the state.

Assumptions:

- All Missouri residents are subject to the utility tax, regardless of their age or income. There are no rebates or credits.

State and Local Gasoline Tax Calculation:³⁵

Calculation:

Missouri’s fuel tax rate is 17 cents per gallon for all motor fuel, including gasoline, diesel, kerosene, gasohol, ethanol blended with gasoline, biodiesel (B100) blended with clear diesel fuel, etc. Missouri also collects two fees on all sales of fuel. The fees collected are the agriculture inspection fee, in the amount of 2.5 cents per 50 gallons (\$0.0005 per gallon), and the transport load fee, in the amount of \$40 per 8,000 gallons (\$0.005 per gallon). This results in 17.55 cents per gallon as the total rate for taxes and fees collected.

Gasoline taxes are calculated by first dividing the total number of miles driven by the vehicles’ average mpg rating and multiplying by 17.55 cents.

Assumptions:

- Taxpayers purchase all gasoline within Missouri.

Tobacco Tax Calculation:³⁶

Calculation:

Missourians pay \$0.17 in state tobacco taxes per pack of 20 (or \$0.2125 per pack of 25) cigarettes. In addition, Missourians pay a 10-percent tax on the invoice price of all tobacco products. Saint Louis and Jackson counties each impose an additional \$0.05 tax on cigarettes per pack.

Assumptions:

- The state retail price of cigarettes per pack is \$5.
- Cigarettes are only sold in packs of 20.

NOTES:

- ¹ See, for example: Hafer, R.W., “Should Missouri Eliminate the Individual Income Tax?” *Show-Me Institute*, Policy Study #11, Dec. 5, 2007, pp. 1-24; and: Haslag, Joseph, “How an Earnings Tax Harms Cities Like Saint Louis and Kansas City,” *Show-Me Institute*, Policy Study #1, March 8, 2006, pp. 1-48.
- ² Online here: <http://www.showmeinstitute.org>
- ³ Likewise, self-employed Missourians may have different income tax burdens than those estimated by the estimator.
- ⁴ Users might also be interested in comparing their results with the National Bureau of Economic Research’s *TaxSim* model, which computes similar tax estimates using a Fortran-based procedure. Less technically minded users may find the NBER’s model prohibitively complicated. Online here: <http://www.nber.org/~taxsim/>
- ⁵ A general list of assumptions is provided in footnotes at the bottom of the estimator. Full details are also provided in the appendix of this report.
- ⁷ The estimator also estimates (but does not tally) a user’s federal income and payroll taxes in cells C52 and C53, respectively.
- ⁹ The Tax Foundation, a Washington D.C.-based educational organization, estimates “Tax Freedom Day” for each state in the country. Online here: <http://www.taxfoundation.org/taxfreedomday/>
- ¹¹ Note: The city of residence menu is dependent on the county selection. That is, the list of cities will be those cities that are located within the county the user selects. If data is not available for your city or school district, select “State Average” from the menu choices.
- ¹² In addition to its impact on a user’s property tax, the home ownership questions will also impact a user’s mortgage interest income tax deduction.
- ¹³ This approximation is based on the fact that households generally spend 70 percent of gross income on consumption goods, of which just under half are subject to state and local sales taxes. For details, refer to: Gale, William G., “Don’t Buy the Sales Tax,” *The Brookings Institution*, March 1998. Online here: <http://tinyurl.com/28fnn8>
- ¹⁴ Local tax rates were difficult to obtain for all tax jurisdictions (particularly rural districts). The fact that the state average is unweighted implies that using it as a benchmark will provide conservative estimates.
- ¹⁵ Full details of the Median household demographics are as follows: Median Home Statistics Prices: <http://tinyurl.com/2cnmh3> Mortgage Size: <http://tinyurl.com/cswmk> Mortgage Interest: <http://mortgagerates.consumermortgagereports.com/> Household Size: <http://tinyurl.com/24gdok> Inflation Adjustments: <http://research.stlouisfed.org/fred2/data/CPIAUCSL.txt> Vehicle Statistics: Costs: <http://tinyurl.com/29d8no> Gas Mileage: <http://tinyurl.com/ywdl66> Student Loan Debt: <http://www.finaid.org/loans/> Calculation details: Two-thirds of college graduates finish school with debt that averages \$19,237, and 20 percent of Missourians graduate college. Therefore, median Missouri student loan debt is approximately \$2,539 (\$19,237 x 20 percent x 66 percent), with an interest rate of 6.8 percent (the current Stafford rate).
- ¹⁶ Actual estimates may vary slightly from those reported in Figure 5 because of rounding differences and changes in tax rates since publication.
- ¹⁷ This figure was obtained from a Monte Carlo simulation of asset return dynamics. Simulations were generated by Crystal Ball®, assuming annual stock returns are log normally distributed with a risk-adjusted mean of 8 percent and a standard deviation of 15 percent, i.e., the 50-year average of the S&P 500 Index. This figure, and those reported below, are not adjusted for inflation or taxes, and also assume discrete annual compounding. Annual contributions are not included in the return dynamics in the year they are distributed, because of timing effects. Full calculation details are available upon request.
- ¹⁸ Again, this figure is obtained from a Monte Carlo simulation of expected portfolio returns, assuming the total return dynamics of the past 30 years of the S&P 500 Index, and the past five years of the Lehman Brothers Aggregate U.S. Bond Index (as tracked by the iShares Lehman Aggregate Bond Index), two common benchmarks.
- ¹⁹ University of Missouri–St. Louis tuition and financial aid details are available online here: http://www.ums.edu/services/finance/fee_sch.htm
- ²⁰ Recall that these numbers do not include the Senior Citizen Property Tax Credit, which would imply somewhat lower annual tax rates if the couple were actually eligible. Social Security considerations also impact generated tax numbers.
- ²¹ See, for example: Dougherty, Connor, “The New American Gentry,” *Wall Street Journal*, Feb. 1, 2008.
- ²² This assumes an annual risk-free interest rate of 4 percent. As of Feb. 4, 2008, the yields on 10-year and 30-year Treasury bonds were trading at 3.64 and 4.37 percent, respectively.
- ²³ Annual state, county, and municipal sales taxes are assessed at the rate reported in the Missouri Department of Revenue’s October–December 2007 Sales/Use Tax Rate Table, by county/municipality, online here: <http://dor.mo.gov/tax/business/sales/rates/2007/oct2007.pdf>
- ²⁴ Goods subject to taxation can be found on the Secretary of State’s website online here: <http://tinyurl.com/23mh3x>
- ²⁵ Online here: <http://tinyurl.com/23oo37>
- ²⁶ Property tax rates vary by municipality, school district, water district, etc. Although electronic records are readily available for large municipal districts, rural records can be difficult to obtain. A list of available sources can be provided upon request.
- ²⁷ Online here: <http://tinyurl.com/2d2lub>
- ²⁸ Online here: <http://dese.mo.gov/news/2004/survey.htm>
- ²⁹ Online here: <http://www.irs.gov/formspubs/article/0,,id=164272,00.html>
- ³⁰ Online here: <http://tinyurl.com/ywrpj7>
- ³¹ 2008 IRA deductions have been extended to \$5,000 for individuals with incomes less than \$53,000 (\$85,000 for joint filers).
- ³² Online here: <http://tinyurl.com/25je9u>
- ³³ Missouri Revised Statute: <http://tinyurl.com/23r2hs> Saint Louis statute: <http://stlouis.missouri.org/citygov/collector/earningstax.html> Kansas City statute: <http://www.kcmo.org/finance.nsf/web/earntax>
- ³⁴ Missouri Taxation Statutes: <http://www.sos.mo.gov/adrules/csr/current/12csr/12csr.asp> Missouri Gross Receipt Tax Definitions: <http://www.sos.mo.gov/adrules/csr/current/12csr/12c10-117.pdf> St. Louis County Gross Receipt Tax Rates: <http://revenue.stlouisco.com/Licensing/GrossReceipt.aspx>
- ³⁵ Details of Missouri’s gasoline taxes can be found online here: <http://tinyurl.com/2e2oot>
- ³⁶ Missouri State tobacco tax FAQ: <http://dor.mo.gov/tax/business/tobacco/taxrates.htm>