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HOW AN EARNINGS TAX HARMS CITIES LIKE ST. LOUIS AND KANSAS CITY

By Joseph H. Haslag

EXECUTIVE SUMMARY

About one in four large cities in the United States has an earnings tax. I attempt to quantify the relationship between the earnings tax rate and the growth rate of cities relative to their metropolitan statistical areas (MSA). I find that cities with an earnings tax tend to have a significantly lower ratio of city income to MSA income than those without them.

These findings are particularly relevant to Missouri because Missouri's two largest cities have an earnings tax. I compare changes to major economic indicators in St. Louis, Kansas City, and Springfield and find that Springfield is losing ground to its suburbs, but not nearly as rapidly as St. Louis and Kansas City in terms of income and employment. I then extend the analysis, estimating the relationship between the earnings tax rate and the city-to-MSA income ratio using a cross-state dataset. The cross-state evidence indicates that a city with a one-percent earnings tax rate will, on average, have a five-percentage-point lower city-to-MSA income ratio than a city with no earnings tax. Thus, the evidence points to a substantial relocation occurring in those cities that adopt an earnings tax.

The economics is quite straightforward. By adopting an earnings tax, a city gives businesses and residents an incentive to locate production outside the city. People go where they will obtain the highest after-tax return on their labor or investments. In order to raise the return, people locate more productive capacity outside the city limits in order to avoid the tax burden. This incentive effect can account for why the city share of per capita income is smaller in cities with earnings taxes than without.

The bottom line is that city earnings taxes do matter. Cities that wish to increase their rate of economic growth should consider reducing or eliminating their earnings taxes.

Joseph H. Haslag is an associate professor of economics at the University of Missouri, Columbia. He holds a master's degree in economics from the University of Missouri and a Ph.D. from Southern Methodist University.

In this study, I test whether there is a systematic relationship between a city's tax rates and its size relative to the surrounding suburbs.

INTRODUCTION

Everyone is familiar with the income tax that exists at the federal level. Nearly 60 percent of federal revenues come from the individual income tax. Yet, at the municipal level, income taxes are generally eschewed. Of the 100 largest cities in the United States, only about one fourth have adopted some kind of earnings tax. Most cities rely instead on property taxes to pay for municipal services and infrastructure.

On the surface, a city earnings tax seems attractive. Earnings, especially wages, are generally easy to measure. The tax rate is less than two percent in more than half of the cities that have an earnings tax. Even Philadelphia's 4.54 percent rate is low compared to federal rates. With such low rates it is difficult to imagine that a business's location decision is seriously affected by the presence of an earnings tax. Indeed, there are more important factors affecting the location decision, such as the proximity of other businesses. Furthermore, a city's infrastructure is developed to support a central business district. City leaders assume their income tax base is inelastic with respect to the earnings tax, at least at low tax rates. Put another way, the city leaders know that it would be costly to develop the infrastructure needed to support such a high level of business activity elsewhere. It hardly seems worth moving just to avoid a tax that is a few pennies per dollar earned.

A city can also erect barriers to competitive forces that emerge because of the earnings tax. In part, the central business district's value is due to the proximity of complementary business activities. A city can apply zoning laws to create barriers between the city's business district and a competing suburb. There is a risk that services will locate near the suburban living areas, but such distances may highlight the advantages to locating high-paying jobs—finance and legal services, for example—near one another. Once located in the city, inertia keeps them there, making it more difficult for a suburb to successfully compete against the city, even one that adopts a distortionary tax that creates an incentive to relocate. The result is an equilibrium between the city and its suburbs that maintains the city as the dominant location for these high-value service businesses.

The purpose of this report is to examine the evidence with respect to economic activity in cities and their suburbs. I wish to test the hypothesis that the earnings tax does not matter—that because of the city's advantages, the earnings tax does not induce businesses to relocate, especially when the earnings tax rate is so low. In this study, I test whether there is a systematic relationship between a city's tax rate and its size relative to the surrounding suburbs. It may be that cities are losing a substantial amount of business to competing suburbs thanks to the earnings tax.

Missouri Cities and the Earnings Tax

Missouri is an interesting case study for the earnings tax. The Missouri legislature authorized a city earnings tax in 1947. After World War II, there were significant changes in the tax base within metropolitan areas, as infrastructure

investment made commuting less costly. Suburbs were created. Each city's tax base was adversely affected as property tax revenue shifted to suburban areas, while business activity remained principally in the city's central business district. Insofar as property taxes were the chief source of city revenue, the city government needed to identify an alternative tax base. Ideally, the new tax base would not be as mobile.

According to Missouri statute, cities with population exceeding 70,000 are permitted to impose a city earnings tax. The statute further stipulates that the city's tax rate cannot exceed one percent. To date, only St. Louis and Kansas City have implemented such taxes. In both cases, the tax applies to people working or living within the city limits. Periodically, Springfield considers imposing an earnings tax, but it has not done so. In both Kansas City and St. Louis, the tax rate is one percent, the maximum rate permitted by state law.

These three Missouri metropolitan statistical areas (MSA) serve as a case study.[1] With two cities imposing an earnings tax and one not, there is a control group and a study group. With different tax policies, it is possible to identify the differences between the economies as owing, at least partly, to the differences in the city tax rates. By focusing on three Missouri cities, we can ignore the effects of state and federal policies when conducting our analyses. Because state individual and corporate income taxes are the same in St. Louis, Kansas City, and Springfield, we know that these factors do not contribute to differences among the three Missouri MSAs.

Cross-state Analysis

I use census data from across the country to explore the relationship between the earnings tax rate and the distribution of income between the city and its suburbs. In doing so, it is possible to draw statistical inference from a large sample.

In recent decades, American cities faced a shrinking tax base while demand for their services remained high. For example, police and infrastructure were needed to support the daily inflow of workers and for the city's leisure activities in the evenings. So, despite the new distribution of residences, the city continued to provide services to a great many of the metropolitan area's citizens.

Economic theory tells us that governments should tax goods whose demand is most inelastic. While residents fled to the suburbs, city leaders assumed that the city's central business district would not be as mobile. Most people would continue to work within the city even if they paid a small earnings tax. City leaders implemented the city earnings tax based on the assumption that business activity in the city center is inelastic with respect to the earnings tax rate.[2]

Choosing a central location for your business can have many advantages. For instance, commercial banks might prefer to locate near a Federal Reserve Regional Bank.[3] Law firms may want to locate near Federal and Municipal courthouses. An accounting firm may wish to choose a location that's convenient for their corporate clients. More generally, a business's profitability may depend on the proximity to complementary businesses. Thus, absent other

Cities with population exceeding 70,000 are permitted to impose a city earnings tax.

Economic theory tells us that governments should tax goods whose demand is most inelastic.

distortions, we can expect businesses to concentrate in the center of the metropolitan area, creating the city's "downtown." City leaders hoped that the advantages of a convenient location would keep businesses in the city despite the added costs of an earnings tax.

Goals and Overview of Results

In this study, I have two main goals. First, I want to identify empirical regularities in the distribution of economic activity within a metropolitan area. I evaluate the effects of the earnings tax by looking at how the city and its surrounding suburbs compete for economic activity. Missouri is an interesting test case. I also ask if there exists a systematic and quantitatively important relationship between the earnings tax rate and the distribution of economic activity at the national level. Second, I develop an economic framework that illuminates the key factors that account for the observations presented in this study.

There are four principal facts. First, personal income in the suburban part of the St. Louis, Kansas City, and Springfield MSAs has grown faster than in their city parts. This suggests that economic growth in the city tends to spread to the surrounding suburbs. After the city economy reaches a particular size, we observe a convergence in the metropolitan area economy as income growth in the suburbs outpaces income growth in the city. We find this pattern in data on employment and personal income over the past thirty years.

Second, the evidence indicates that Springfield's city economic growth is closer to its suburban economic growth than we observe in either St. Louis or Kansas City. I compute the ratio of personal income growth in the suburban part of each MSA to the city part of each MSA. The smaller the ratio, the smaller the difference is between the income growth rates in the two parts of the MSA. For personal income growth, I compute the annual average growth rate of personal income between 1969 and 2002. Springfield's suburban-to-city ratio is 1.7, while Kansas City reports 2.3 and St. Louis reports a value of 10.4. Thus, the city part of Springfield is growing faster relative to its suburbs than city parts of either Kansas City or St. Louis are growing relative to their suburbs.

Third, the city part of Springfield is the fastest growing city part of the three Missouri MSAs. In terms of both employment and personal income, the city part of Springfield reported faster growth between 1969 and 2002 than either Kansas City or St. Louis.

Fourth, national evidence indicates that cities with earnings taxes grow slower relative to their suburbs than cities without earnings taxes. In other words, an earnings tax is systematically associated with a redistribution of economic activity. In metropolitan areas in which the principal city imposes an earnings tax, I show that the city's income is, on average, a smaller fraction of the metropolitan area's income than it is for cities in which no earnings tax is imposed. Such evidence suggests that cities are shrinking relative to their suburbs and that the rate of shrinkage is positively related to the city earnings tax rate.

These facts suggest that the city earnings tax matters. The city earnings tax creates an incentive for people to relocate outside the city. The city earnings tax may speed up the rate at which economic activity shifts to the suburbs. Economic development could also be faster in cities without an earnings tax than in cities with one.

In the last part of this report, I develop a framework that can account for these observations. My model economy includes a role for externalities that would give the city a geographical advantage over the suburb. The model can characterize the development of the suburb, including the result that the suburb might catch up to the level of economic activity in the city. The process of catching up, or convergence across the metropolitan area, is one explanation for why the suburb can grow faster than the city even if there is no city earnings tax. I then use this model economy to examine the effects of adopting a city earnings tax. I show that this model economy predicts that a city will stagnate. The earnings tax puts an upper bound on the amount of capital accumulated in the city. This amounts to an endogenous cap that limits how big the city's economy can be.

LOCATION, LOCATION, LOCATION: WHAT ECONOMIC THEORY SAYS

There is a large economic literature that focuses on location decisions. Broadly speaking, the literature is divided into two categories, each associated with a seminal paper. The Hotelling strand focuses on spatial competition in which firms must decide where to locate. The Tiebout strand focuses on where households choose to live based on the provision of local public goods.

Hotelling: The Role of Transaction Costs

Hotelling (1929) examines a problem in which two firms produce a homogeneous good. Marginal production costs are equal across firms so that there is no comparative advantage. The firms must simultaneously decide where to locate in a market defined as a line segment one unit long. Consumers are uniformly distributed along the line segment, and each consumer demands one unit of the product. Consumers incur a transaction cost proportional to the distance traveled to reach a firm. Because neither firm can identify where a consumer lives and because marginal production costs are constant, the product's price is the same for both firms. In Hotelling's world, price exceeds marginal cost so the profit per unit sold is positive.

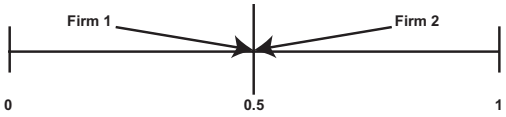
It should be clear why the location decision is important: The firm's location determines how many customers it will attract. Once the firm's location is set, the consumer chooses the closest firm to minimize her costs. It follows that in order to maximize profit, the firm chooses a location that will make it the closest firm to as many customers as possible.

Figure 1 illustrates the equilibrium solution to the basic Hotelling problem. Both firms will locate as close to the midpoint as possible, effectively dividing the market between them.

Springfield's city economic growth is closer to its suburban economic growth than we observe in either St. Louis or Kansas City.

National evidence indicates that cities with earnings taxes grow slower relative to their suburbs than cities without earnings taxes.

Figure 1
An Illustration of Where Firms Locate in the 2-firm Hotelling Model



Consumers living on left-hand side will trade with Firm 1 because it is less costly for them to go to this location. Consumers living in the right will trade with Firm 2 because that is their low-cost trading location.

Obviously, the Hotelling problem is a simplification of the real world. Since 1929, a large number of researchers have relaxed Hotelling's assumption. I will not review all the extensions here.[4] However, I will note an interesting extension by Prescott and Visscher (1975). They extend the basic Hotelling problem to consider sequential, as opposed to simultaneous, location decisions. They use a three-firm economy to illustrate the solution to this problem. They find that in the three-firm, sequential case, the firms spread out relatively uniformly along the line.[5]

Overall, Hotelling offers a guide for how to think about spatial decisions by firms. For our purposes, it provides a framework that accounts for why multiple firms selling identical goods do not amass all at the same spot. However, the shortcoming of this framework is that it focuses only on the supplier's location decision. Next, we consider a model in which consumers choose where to live.

Tiebout: Competing Public Good Provision

There is another class of models that deals with location decisions. Tiebout's (1956) seminal paper focuses on where households choose to live, taking into account the provision of local public goods.[6]

One way to illustrate Tiebout's model is to consider a metropolitan area consisting of a city and some suburbs. We assume the city's location is determined by the existence of natural amenities. Each community within the metropolitan area then decides how much of the different local public goods—such as schools, parks, etc—to provide, along with tax rates and housing development. Because all consumers are potentially mobile, they locate based on their preferences over the items offered by each community in the metropolitan area.[7] The city and the suburb compete by offering differing sets of services. Population is distributed according to people's demand for those services.

Suppose a metropolitan area has a city and two suburbs, A and B. The city has certain natural features that contribute to its value. According to Tiebout, people move out of the city and into suburb A as they value the public goods in suburb A more than those offered by the city and as transportation costs decline. For instance, if schools in suburb A have smaller classes and teachers with higher education levels, then households that value education might move to suburb A. Of course, the move is also dependent on there being adequate roads to get people from suburb A into the city for work. Suburb B might attempt to attract residents by offering more park and recreational settings. Households valuing those public goods would move from the city to suburb B, as long as there was adequate infrastructure to make the commute to the city for work.

We can see Tiebout's model in action by looking at the behavior of the American middle class after World War II. Interstate highways were installed, allowing houesholds more freedom to choose among political jurisdictions. Household location decisions were increasingly made based on the mix of public goods provided by different municipalities.

Together, Hotelling and Tiebout are the dominant frameworks for studying location decisions. Bits of each framework are useful for the current study, but alas, neither is exactly suitable to our purpose. The Hotelling problem focuses on where firms locate. Tiebout focuses on the decision of where to live, explaining why suburbs emerge as people consume different types of public goods.

Hotelling's model is closer in spirit to the economy I will present later in this report, because it focuses on the locations of productive businesses. The city earnings tax applies to the value of productive activity. I am interested in the incidence of the city earnings tax and whether a city earnings tax has a significant effect on the location of productive assets. Diminishing marginal returns is a sufficient reason for productive activity to locate in the suburbs; that is, at some level one more dollar invested in businesses located in a suburb yields a higher return than an extra dollar invested in businesses located inside the city limits.

Tiebout's analysis emphasizes the nature of competition between political jurisdictions and takes the mobility of people into account. Under the Tiebout model, we might view the lack of an earnings tax as an amenity that suburbs use to attract and retain residents. As the reader will see, my aim is to develop a more general framework in which features from both literatures are commingled.

THE EVIDENCE FROM MISSOURI METROPOLITAN AREAS

In this section, I present evidence on economic activity in each of the three Missouri MSAs: St. Louis, Kansas City and Springfield. Income and employment data are available at the county level. These data are used to compute growth rates and relative measures of economic activity within the MSA. County-level data allows us to measure the Missouri-only part of the MSAs. Because the St. Louis and Kansas City metropolitan areas are bisected by state lines, one of two sets of state tax rules apply, depending on where the taxpayer resides. For completeness, I will also present evidence on the non-Missouri parts of the MSAs.

In this report, Springfield serves as the control MSA because it is not subject to an earnings tax. Therefore the earnings tax is a possible explanation for differences among the three MSAs. Because all three MSAs are within the same state, the comparison implicitly controls for policies at the state level.

The county-level approach has some limitations. The St. Louis MSA has the cleanest dataset, because the city is a separate political entity that is treated on par with a county. Consequently, the earnings tax jurisdiction corresponds exactly to the reporting unit for income and employment. However, neither the Kansas City nor the Springfield city limits

There is an upward trend in earnings tax receipts collected by Kansas City.

Income in the Missouri suburban part of the St. Louis MSA was nearly two and a half times its 1969 level.

match the boundary of a county. Kansas City's city limits extend across several counties and no county lies entirely within the city. Therefore, its tax jurisdiction is not directly represented in the available data. Throughout this analysis, I treat Jackson County data as the indicator of economic activity for Kansas City. Springfield lies entirely within Greene County. I use Greene County data as an indicator of economic activity for Springfield.

I will focus my attention on the distribution of economic activity within the MSA. I divide the MSA into a city part and a suburb part. I look for patterns that are consistent with the notion that tax avoidance results in faster growth in the suburb part than in the city part. Because Springfield does not have a city earnings tax, its pattern of city vs. suburb growth provides a baseline.

Before I examine patterns of economic development within the MSA, I report data on the city earnings tax revenue collected for St. Louis and Kansas City.

Earnings Tax Revenues

I begin with two figures that plot the earnings tax revenues collected by St. Louis and Kansas City. Figure 3 plots the earnings tax revenues reported by the City of St. Louis from 1990 through 2003.[8] The evidence indicates that earnings tax revenues have been increasing over time. There has been a slight decline since 2001, but it is too early to infer that a new trend is emerging. The data is consistent with patterns observed in the national data.

Figure 4 plots the revenues from the city earnings tax reported for Kansas City for the period 1970 through 2003.[9]

I was unable to obtain data for the years 1972 and 1985. Clearly, Figure 4 shows that there is an upward trend in earnings tax receipts collected by Kansas

Figure 3
Earnings Tax Revenues—St. Louis City

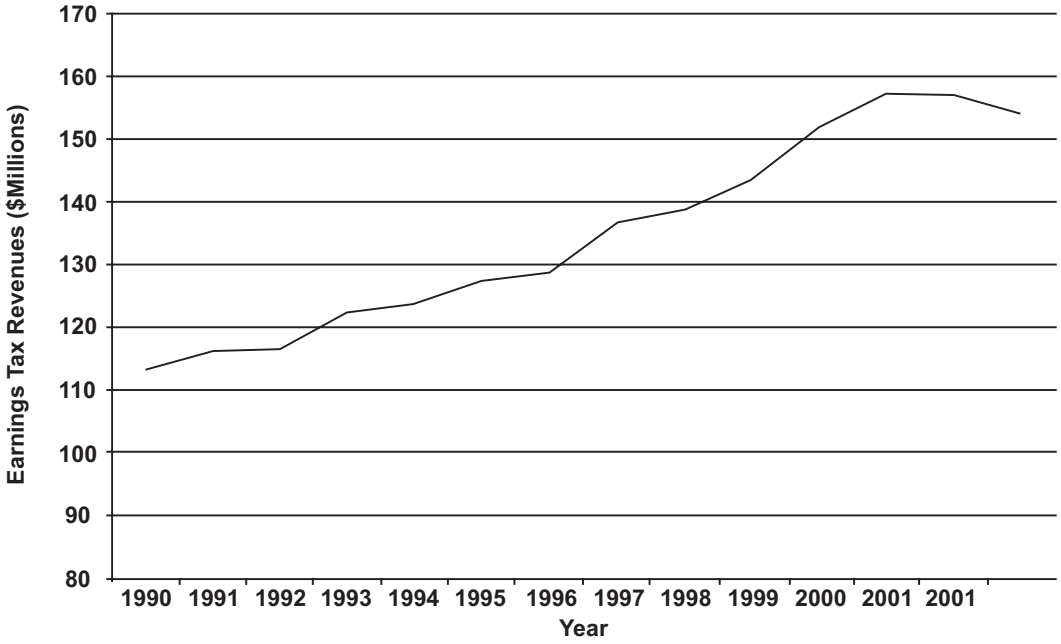
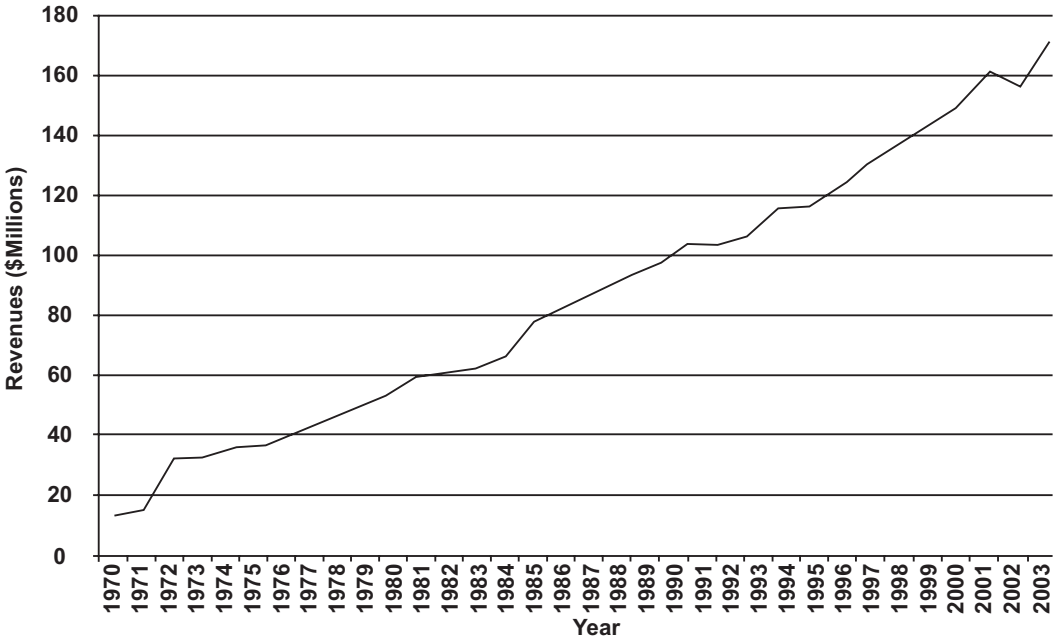


Figure 4
Earnings Tax Revenues—Kansas City



City. As we observed in the St. Louis data, Kansas City's earnings tax receipts fell in 2001. Given the national recession in 2001, it is not surprising to observe a decline in Kansas City's earnings tax receipts. Note that Kansas City's earnings tax receipts bounced back up in 2002 and 2003.

Overall, the evidence suggests that earnings tax revenue data for St. Louis and Kansas City are procyclical. During 1990s, when the national economy was expanding, revenues from the earnings tax expanded. Conversely, when the economic downturn occurred in 2001, the national economy and revenues from the earnings tax in St. Louis and Kansas City declined. The evidence further suggests that St. Louis and Kansas City economies are procyclical.[10]

Income

Next, I report personal income for both the city part and the suburb part of each Missouri MSA for the period 1969 through 2002, adjusted for inflation.[11] In order to facilitate comparisons within the MSA, I index income to its 1969 level. Indexation makes it easy to gauge the relative growth rates across the MSAs, distinguishing between the city and the suburb.[12] Such evidence bears directly on whether there has been redistribution of economic activity with the MSA.

Figure 5 reports the indexed values for St. Louis City and its suburban counties in Missouri. For the suburb part, I aggregate real personal income for Franklin County, St. Louis County, Jefferson County, Lincoln County, St. Charles County, and Warren County. For each year, I plot a pair of bars corresponding to the city index (black) and the suburb index (white).

Figure 5 shows that real personal income has dropped slightly in St. Louis, while it has increased in the Missouri suburbs. After 33 years—a little over

2002 personal income in St. Louis City was only about 95 percent of its 1969 level.

Unlike the city of St. Louis, Kansas City did experience some growth over the last three decades.

a generation—income in the Missouri suburban part of the St. Louis MSA was nearly two and a half times its 1969 level. On the other hand, 2002 personal income in St. Louis City was only about 95 percent of its 1969 level. Clearly, a redistribution of economic activity occurred in the St. Louis MSA as income shifted from the city to the suburb.

Figure 6 plots indexed real personal income for Kansas City and its Missouri suburban area. The Missouri suburb part consists of Cass County, Clay County, Clinton County, Lafayette County, Platte County, and Ray County. As Figure 6 indicates, Kansas City's 2002 real personal income was one and a half times its 1969 level. Over the same period, the Missouri suburb part of Kansas City realized 2002 income that was triple its 1969 level. As with St. Louis, income grew relatively faster in the suburb than it did in the city and economic activity in the suburban part of Kansas City was converging to the level of the city. The proportion of the Kansas City MSA's economic activity in the city part has shrunk over time.

Unlike the city of St. Louis, Kansas City did experience some growth over the last three decades. It is possible that the non-Kansas City part of Jackson County accounts for the observed growth in income—that communities like Independence and Raytown experienced growth while Kansas City stagnated. The data are simply not detailed enough to rule out that possibility.[13]

Figure 7 plots indexed real personal income for the Springfield MSA. The suburb part is defined as Christian County and Webster County.

As Figure 7 shows, the city part of the Springfield MSA saw income increase about three times between 1969 and 2002. Over the same time period, personal income in the suburb part increased five-fold. The evidence, therefore, suggests that economic activity has been redistributed from the city part of the Springfield MSA to the suburb part. On the surface, therefore, the evidence is in line with the observations for the St. Louis and Kansas City MSAs.

To recap, I summarize the percentage change in real personal income for both the city and suburb parts of the metropolitan areas. Table 1 presents these data, computing the annual average percentage change for the period between 1969 and 2002. For reference, I also include changes in real personal income for the Illinois and Kansas parts of the St. Louis and Kansas City MSAs, respectively.

Table 1 makes three important points. First, it shows that areas without an earnings tax grow faster than those with one. Springfield has grown faster than either St. Louis or Kansas City.

Second, the suburban parts grow faster than the city parts of all three Missouri MSAs. However, the suburban-to-city growth ratio is clearly not the same across the three metropolitan areas. We compute the absolute value of the ratio of growth rates, using the percentage change in the Missouri suburbs divided by the percentage change in the city. Springfield's ratio is 1.7, Kansas City records a 2.3 and St. Louis reports a 10.4. The ratio is a simple indicator of how close the city's growth rate was to the suburban growth rate. A ratio of one, for instance, indicates the city and suburb grew at the

Figure 5
Income for St. Louis (black) and Suburban Metro Area (white)

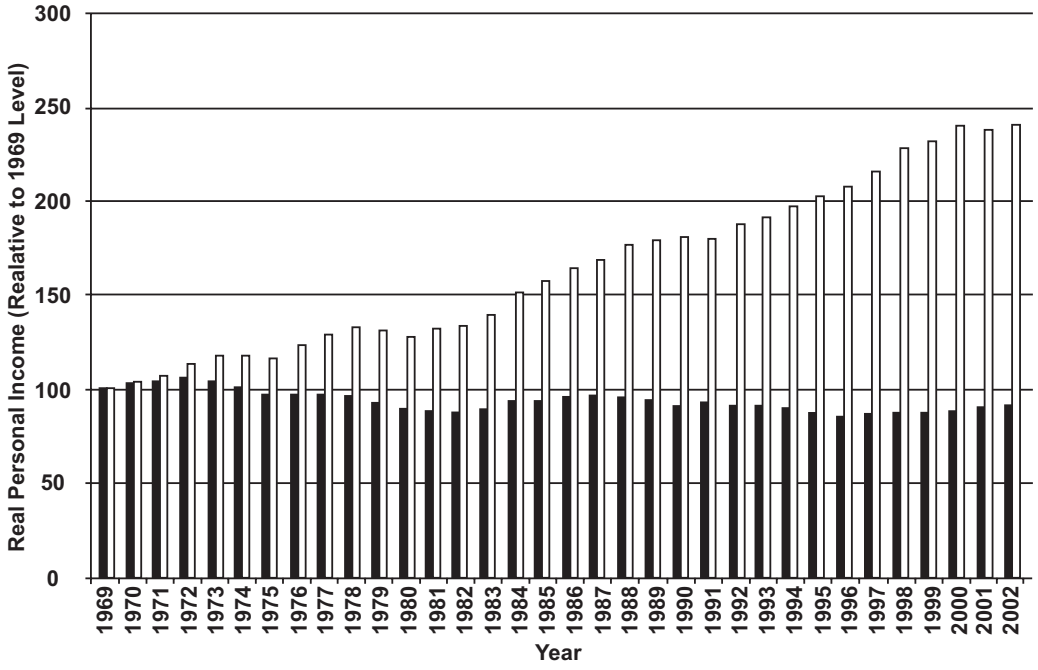
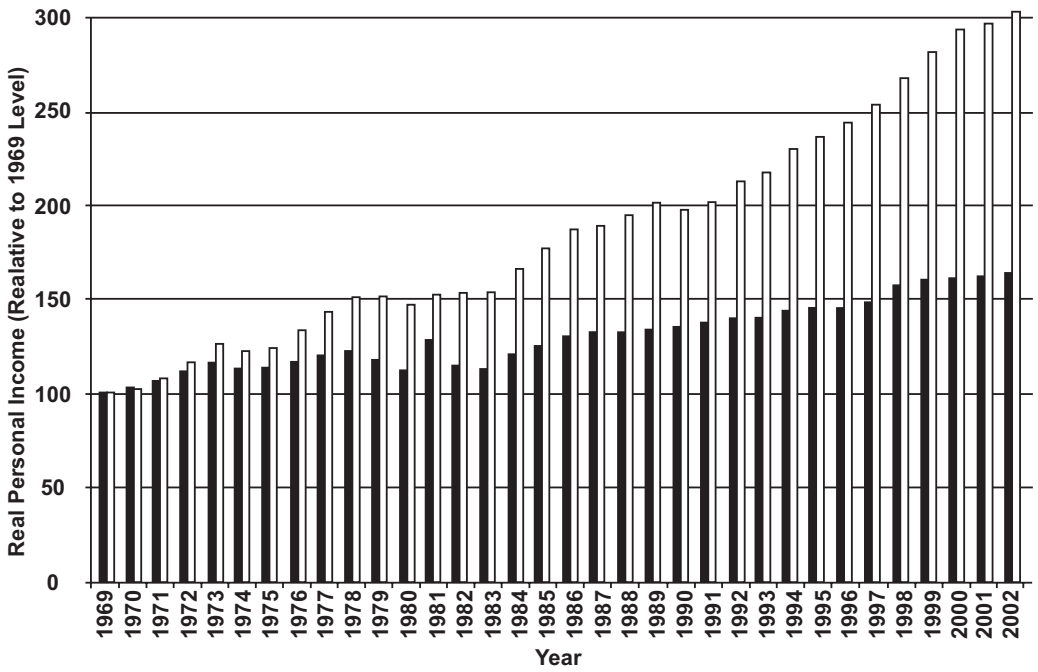


Figure 6
Income for Kansas City (black) and Suburban Metro Area (white)



same rate. Springfield's ratio is closer to one than either Kansas City or St. Louis. In other words, Springfield's growth was closer to its suburban part than either of the two cities in which an earnings tax exists.

The city part of the Springfield MSA saw income increase about three times between 1969 and 2002. Over the same time period, personal income in the suburb part increased five-fold.

By 2002, employment in the city of St. Louis accounted for only about 22 percent of total MSA employment.

Figure 7
Income for Springfield (black) and Suburban Metro Area (white)

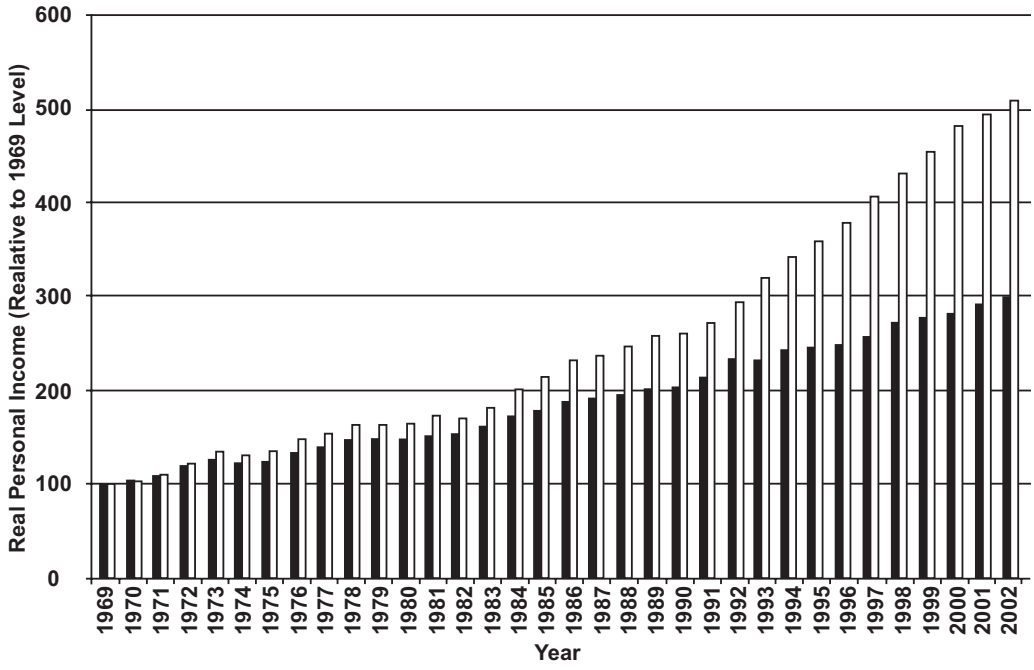


Table 1
Real Personal Income Data
Missouri Cities and Suburbs, 1969-2002

AREA	REAL PERSONAL INCOME ($MILLION) 1969	REAL PERSONAL INCOME ($MILLION) 2002	AVERAGE ANNUAL PERCENT CHANGE 1969-2002 % CHNG
ST. LOUIS CITY	5,928	5,437	-0.26
MO MSA SUBURB	14,809	35,662	2.7
IL MSA SUBURB	5,817	9,888	1.62
KANSAS CITY (CITY ONLY)	7,114	11,641	1.5
MO MSA SUBURB	2,353	7,116	3.41
KS MSA SUBURB	5,191	15,277	3.33
SPRINGFIELD (CITY)	1,312	3,912	3.37
MSA SUBURB	225	1,412	5.72

Third, Missouri suburbs fared better than their counterparts in the two bisected MSAs. In St. Louis, the suburban part of the MSA in Missouri grew faster than the suburban part in Illinois. The difference was slightly greater than two percentage points. In Kansas City, the growth differential was slightly less than one-half percentage point, but the suburban part of the Kansas City MSA in Missouri still grew faster than the suburban part in Kansas.

Overall, the first two facts are consistent with the notion that an earnings tax retards economic growth. By comparing city parts only, Springfield grew faster than either St. Louis or Kansas City. The evidence indicates that the flight from Springfield's city part to its suburb part

was relatively slower than the analogous migrations out of St. Louis and Kansas City.

Employment

In this subsection, I use employment as the indicator of economic activity. These data span 1969 to 2002 and are wage and salary employment reported at the county level. In order to get at the flow of workers from the city part to the suburb part, I compute the ratio of employment in the suburb part to employment in the city part. An increase in the ratio implies that employment has shifted away from the city part and to the suburb part. Conversely, if the ratio declines, the evidence indicates that employment shifts from the suburb part to the city part.

Figure 8 plots the ratio of employment in the City of St. Louis to the employment in the Missouri part of the St. Louis MSA. The ratio is plotted for the years 1969 through 2002. The data indicate that employment in the city part was slightly greater than employment in the suburb part in 1969 (the ratio is above 50 percent). Over time, the ratio has steadily decreased. Indeed, by 2002, employment in the city accounted for only about 22 percent of total MSA employment. Thus, the employment ratio is consistent with the redistribution indicated in the income data.

The ratio hides one important piece of information. City employment has been steadily declining while suburban employment has been growing.

In 1969, there were 435,000 wage and salary workers employed in St. Louis City. By 2002, the number of wage and salary employees fell to 260,000—a drop of nearly 40 percent.

The employment ratio for the Kansas City MSA is reported in Figure 9. The data indicate that the ratio has been steadily decreasing during the 1969-2002

In 1969, there were 435,000 wage and salary workers employed in St. Louis City. By 2002, the number of wage and salary employees fell to 260,000—a drop of nearly 40 percent.

Figure 8
St. Louis Employment Ratio (City to MSA)

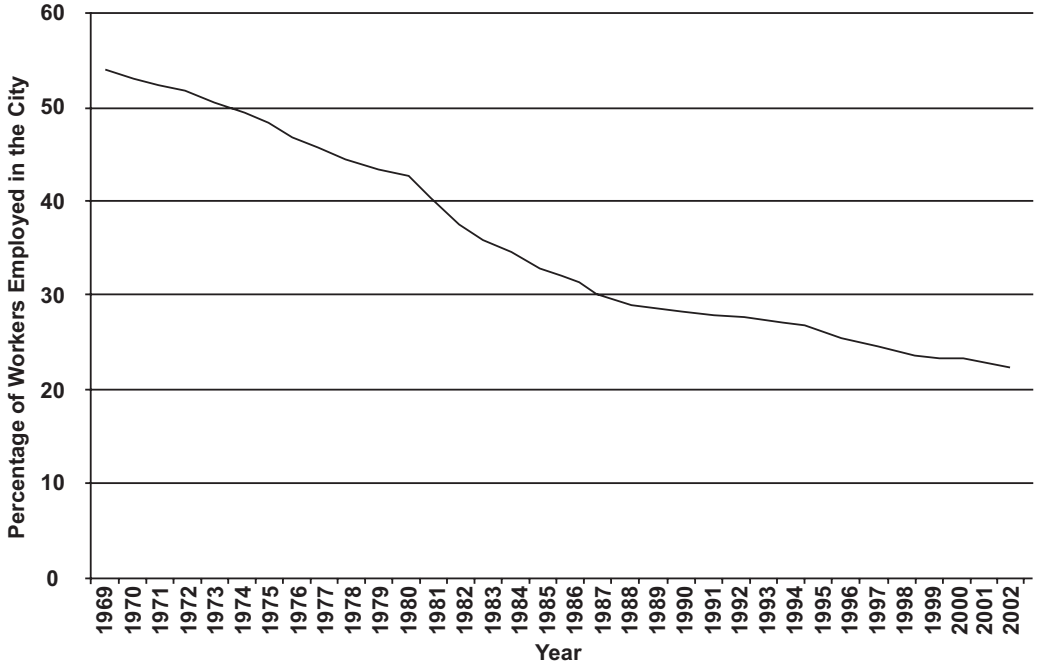
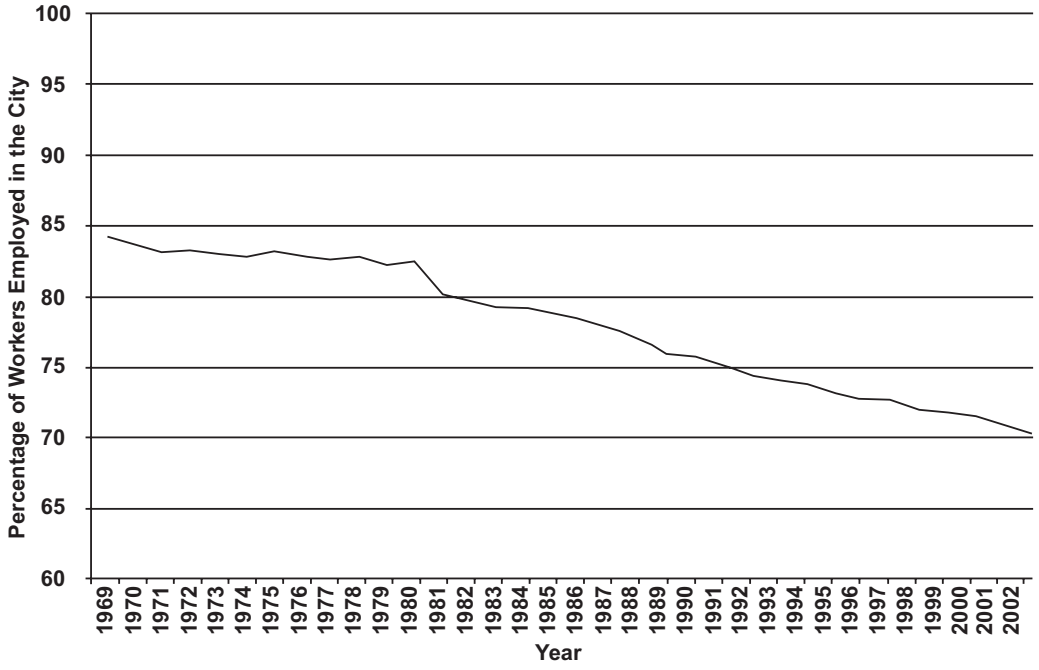


Figure 9
Kansas City Employment Ratio (City to MSA)



It is clear from these data that the city part continues to be the dominant base for employment in the Springfield MSA.

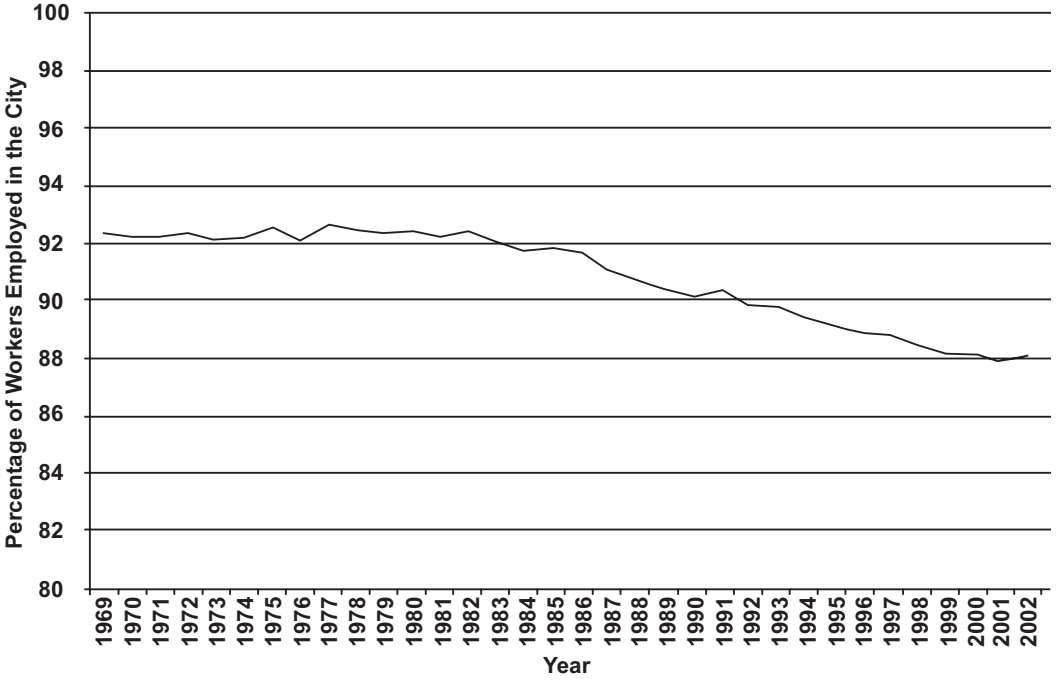
period, from about 85 percent to about 70 percent. Like the St. Louis MSA, the evidence suggests that economic activity has been shifting from the city part of the MSA to the suburb part. Such evidence is consistent with the redistribution of economic activity inferred from the income data. Unlike St. Louis, however, the city part of the Kansas City continues to be the larger of the two parts.

Kansas City differs from St. Louis in one other important respect. Employment in the city part of the Kansas City MSA increased between 1969 and 2002. Recall that employment in St. Louis City contracted by over 170,000 workers during the same time period. Employment increased from 363,000 workers to 405,000 between 1969 and 2002 in the city part of the Kansas City MSA—an increase of about 40,000 workers. Meanwhile, employment in the suburb part more than doubled, rising from 68,000 workers to over 170,000 workers. The evidence indicates that the city part of Kansas City MSA gained employment, but employment in the suburb part increased even faster.

Figure 10 shows the employment ratio for the Springfield MSA between 1969 and 2002. City employment remained at about 92 percent of employment in the MSA part between 1969 and 1987. After 1987, the employment ratio fell steadily, standing at 88 percent in 2002. Hence, it was not until the last part of the 1980s that employment in the suburb part of the Springfield MSA really began to grow relatively faster than employment in the city part. This might be compared to Figure 7, which shows that income in the suburb part of the Springfield MSA also began growing more rapidly than the city part in the mid 1980s.

Overall, the evidence suggests that employment has shifted from Springfield to its suburbs. Between 1969 and 2002,

Figure 10
Springfield Employment Ratio (City to MSA)



employment in the city part rose from 60,000 wage and salary employees to over 150,000. Meanwhile the number of employees in the suburb part increased from 5,000 to 20,000. It is clear from these data that the city part continues to be the dominant base for employment in the Springfield MSA. The data indicate that between 1969 and 2002, more than twice as many workers were added in the city part of the Springfield MSA as in the city part of the Kansas City MSA.

I draw two main conclusions from the data. First, the evidence indicates that each Missouri MSA has exhibited a similar pattern: the city part of the MSA economy has shrunk relative to the suburb part. In St. Louis City, the city economy actually saw employment losses in the face of growing suburban employment. In the Kansas City and Springfield MSAs, the city part has grown, but the suburb part has grown faster.

Second, despite the redistribution of economic activity evident in the Springfield MSA, it is clear that Springfield's city part is growing much faster than the city parts in St. Louis and Kansas City. This is an important fact when assessing the importance of the city earnings tax. In the next section, I broaden the scope of the empirical analysis, building a national dataset that takes into account economic activity inside a city and in the rest of its metropolitan statistical area. In this way, one can tell if the redistribution observed in Missouri is a state-specific result, or if there is a systematic relationship between city earnings taxes and the redistribution of economic activity from cities to suburbs.

In the Kansas City and Springfield MSAs, the city part has grown, but the suburb part has grown faster.

Springfield's city part is growing much faster than the city parts in St. Louis and Kansas City.

CROSS-STATE EVIDENCE

In this section, I extend the analysis to include evidence from across the United States. I construct a data set using Census Bureau data from 1990 and 2000. In order to be consistent across metropolitan areas, per capita income will be my measure of economic activity.

A city earnings tax is a tax on the income of people living or working within the city limits. Those living and working outside the city limits avoid the tax. Therein lies the tradeoff: there is a benefit to living and working inside the city because of physical proximity, but the earnings tax induces people to avoid the additional burden by living outside the city.

Geography—Define the Metropolitan Area

An important measurement issue, therefore, is to define the appropriate measure of the metropolitan area. While the city is well defined, it is less clear how one should think about the area that lies outside the city limits but is connected to or influenced by the principal city. To resolve this measurement issue, I rely on the definitions established by the United States Office of Management and Budget (OMB). Beginning in the 1940s, OMB established guidelines for defining geographic areas as metropolitan areas. The principal conceptual feature is characterized in the *Federal Register,* 65, no. 249, which states:

> "The general concept of a Metropolitan Statistical Area or a Micropolitan Statistical Area is that of an area containing a recognized population nucleus and adjacent communities that have a high degree of integration with that nucleus" p. 82228.

The government takes into account a variety of factors when defining a metropolitan statistical area.[14] Armed with this definition, I divide it into the city part and the suburb part. An MSA is defined as a collection of counties. I take measures of economic activity for the counties that comprise the MSA and subtract out the city's measures of economic activity.

Data are obtained from the Bureau of Economic Analysis, the Bureau of Labor Statistics, and the Census Bureau for over 100 cities across the United States. The United States' decennial census is the primary source. Both population and income data are collected at the city and the county levels. These data, therefore, dovetail nicely with the operational definition of an MSA, which is a collection of counties integrated with a principal city. Data are taken from both the 1990 and 2000 censuses, allowing us to assess the impact of earnings taxes across time.

My analysis is limited to MSAs that consist of at least three counties.[15] I use the three-county rule because it ensures that people have sufficient choices when choosing where to live. There are 101 MSAs in the United States that satisfy this criterion.[16]

Income—Define the Tax Base

Another measurement issue involves the tax base against which the tax rate applies. Earnings taxes are not the same

across the country; the tax base for the earnings tax differs from city to city across the United States. In St. Louis, for example, income is defined quite broadly, including wages, dividends, interest, rental payments, and pensions. For those living outside the city limits, the earnings tax applies only to income earned within the city limits, such as wages. Other cities tax only labor income

In this report, I ignore the different definitions of income used by different cities. If some portion of income is subject to a city tax, I include that city's tax rate. Additional research is needed concerning whether the definition of income subject to the earnings tax is quantitatively important. Because, on average, wages account for two-thirds of people's income, it is unlikely that the different definitions—all of which include wages—have a major impact on the results.

For the interested reader, Appendix B reports the tax rates and income measures for the 23 cities in the United States that impose an earnings tax.

Summary Statistics

Of the 101 cities in the sample, 23 have earnings taxes. The earnings tax rates range from 0.7 percent (Indianapolis) to 4.54 percent (Philadelphia). After reviewing some summary statistics, I compute simple correlation coefficients in order to determine whether there is a systematic relationship between the earnings tax rate and economic activity. I ask two questions: Is the earnings tax rate related to per capita income growth across cities? And is the earnings tax rate related to the distribution of per capita income within in the MSA?

Table 2 presents summary statistics for the 101 MSAs in the sample.

Per capita income in the city part of an MSA is, on average, less than per capita income for the entire MSA. That implies that more affluent households tend to live outside the city.

The evidence also indicates that in metropolitan areas in which a city earnings tax exists, the city's income

Because, on average, wages account for two-thirds of people's income, it is unlikely that the different definitions—all of which include wages—have a major impact on the results.

Table 2
Summary Statistics for Selected Income Measures
the 101 MSAs in the Cross-State sample

VARIABLE	C/MSA—(90)	C/MSA--(00)	%∆C-%∆MSA	C/MSA(90)-C/MSA(00)	Tax rate (%)
MEAN	0.9316	0.9085	-0.3973	0.0231	0.4223
STND DEV	0.0135	0.0142	0.1066	0.0058	0.0894
MINIMUM	0.4757	0.5248	-6.2355	-0.1637	0.0000
MAXIMUM	1.2385	1.2425	3.2324	0.2936	4.5400

Legend: C/MSA—(90) is the ratio of per capita income in the city to per capita income in the MSA using 1990 data
C/MSA—(00) is the ratio of per capita income in the city to per capita income in the MSA using 2000 data
%∆C-%∆MSA is the growth rate in per capita income in city less the growth rate in per capita income in the MSA between 1990 and 2000
C/MSA(90) – C/MSA(00) is C/MSA(90) less C/MSA(00)
Tax rate is the fraction of the city's definition of earnings

This evidence suggests that cities with higher earnings tax rates do not rely more heavily on the earnings tax than do cities with lower earnings tax rates.

growth has been slower than income growth in the adjacent communities. As Column 4 (labeled %ΔC-%ΔMSA) in Table 2 shows, per capita personal income has been growing slower in the cities than in the MSA, on average, for the 101 MSAs in my sample. Between 1990 and 2000, city personal income growth lagged behind MSA personal income growth by 0.4 percentage points. Further, Table 2 shows that the ratio of per capita income in the city part to per capita income in the MSA declined between 1990 and 2000. Indeed, the C/MSA(90) – C/MSA(00) column indicates that the gap between city and adjacent communities widened between 1990 and 2000. The widening gap is really just another way to capture the fact that per capita income grew at a slower rate in the city than in the adjacent communities.

The average marginal rate across the 101 MSAs is slightly below one-half percent.

Reliance on the City Earnings Tax

By itself, the tax rate does not indicate how heavily the city relies on the earnings tax as a source of revenues. In addition to the earnings tax, cities use property taxes, state and federal transfers, and other sources to finance municipal spending. I report the reliance measure as the ratio of earnings tax revenues to total municipal revenues. This gives the reader a sense of the importance of the earnings tax for cities in the United States. Moreover, these data permit us to examine whether there is a relationship between a city's reliance on earnings taxes and its earnings tax rate.

Figure 11 plots the ratio of city earnings tax revenue to total city revenue. These data are taken from 2003 Comprehensive Annual Financial Reports or City Budget Reports.[17] As Figure 11 shows, reliance varies from 10 percent to nearly 70 percent. Interestingly, New York relies the least on the city earnings tax despite having the second highest tax rate. Columbus, OH relies most heavily on the city earnings tax, collecting 69% of its total revenues from this source.

Is there a systematic relationship between the earnings tax rate and a city's reliance on the earnings tax? Figure 12 offers a scatter plot of the tax rate for each city and the fraction of total city revenues received from the earnings tax. There is no obvious relationship evident from the scatter plot. The simple correlation coefficient is 0.17, which is not significantly different from zero. This evidence suggests that cities with higher earnings tax rates do not rely more heavily on the earnings tax than do cities with lower earnings tax rates.

The scatter plot suggests that there are some differences across the cities in terms of the reliance and tax rates. I divide the sample into two groups: cities that rely on the earnings tax for at least 35 percent of their total revenues (hereafter, the high-reliance group) and cities that rely on the earnings tax for less than 35 percent of total revenues (hereafter the low-reliance group). Both Missouri cities—St. Louis and Kansas City—fall into the low-reliance group. For cities that rely on the earnings tax to supply 35 percent of revenues or less, there is substantial variation in the tax rates, ranging from 0.7 percent to 4.54 percent.

Figure 11
Reliance Measure for United States' Cities With Earnings Taxes

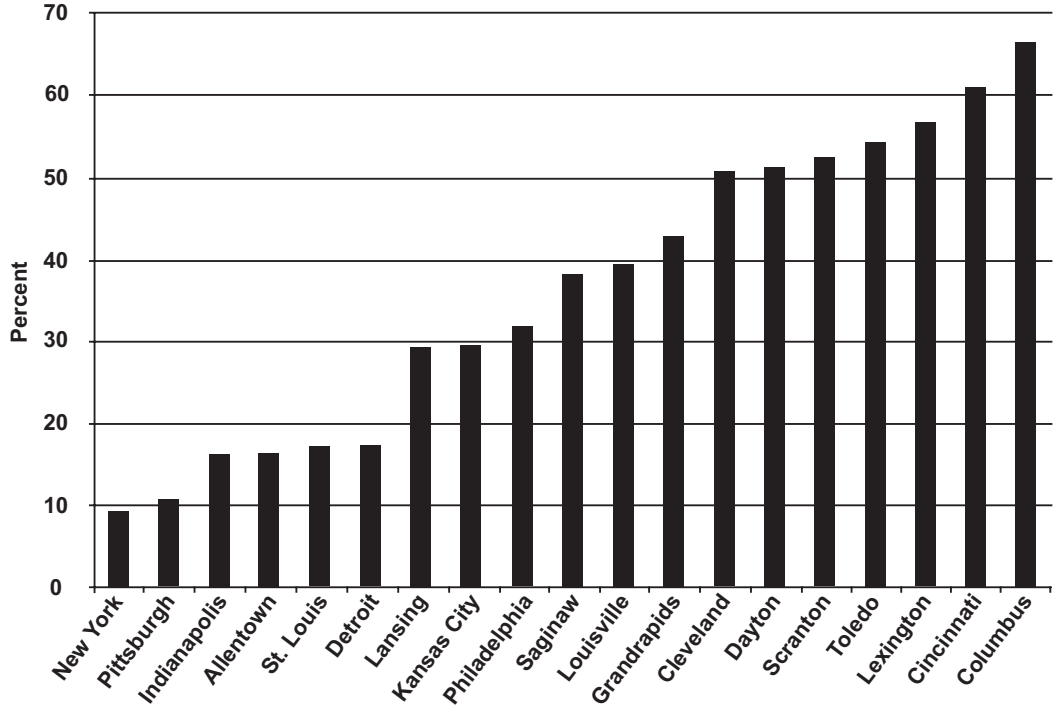
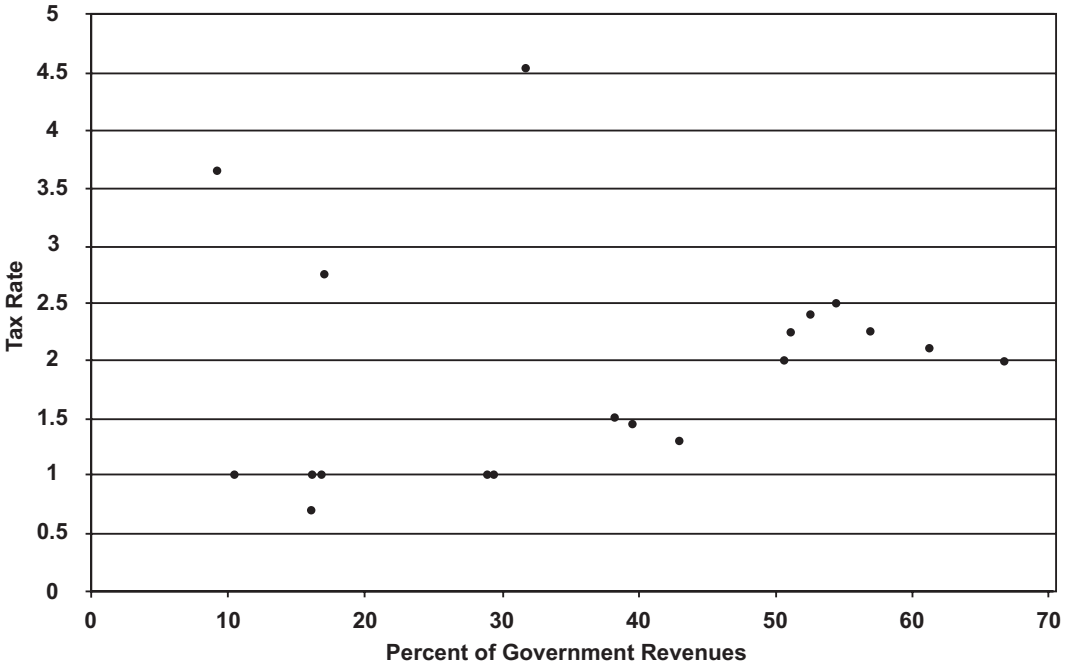


Figure 12
Reliance and Tax Rates



This evidence is consistent with the notion that the earnings tax induces people to move out of the city and into the suburbs to avoid it.

For cities in the low-reliance group, there is no systematic statistical relationship between the earnings tax rate and reliance.[18] In contrast, the high-reliance group does exhibit a systematic relationship. Albeit small in number, I find that there is a positive correlation between the tax rate and the reliance measure for

The regression indicates that a city with a one-percentage-point earnings tax rate will typically report per-capita income in the city part that is five percent less than per capita income in the MSA when compared against a city with no earnings tax.

the subset of cities in the "high-reliance" group.[19] In other words, for high-reliance cities, the evidence indicates that those municipalities that rely on the earnings tax for more than one-third of their total revenues tend, on average, to have higher city earnings tax rates. With such a small sample size, one should be careful to not draw too strong a conclusion from these data.

I think there is one message to take away from the evidence on cities' reliance. The cross-sectional evidence indicates that cities exhibit a large degree of variation in terms of their reliance on an earnings tax. In the United States, cities choose a variety of taxes to generate revenue and do not typically rely on either the property or earnings tax as the primary source. Rather, a combination of local taxes and state and federal payments account for city revenues. I provide weak evidence that the earnings tax rate and the combination of different taxes implemented by a city are related. As a city chooses to rely more heavily on one type of tax to generate its revenues, the data suggest that it will tend to choose a higher tax rate on that activity. No such association is evident among those cities that have a more diversified approach measured by low reliance on the city earnings tax.

Earnings Tax Rates and the Effects on U.S. Cities

In this section, I examine the relationship between the earnings tax rate and economic activity using the cross-state data. In an attempt to determine whether city earnings taxes substantially alter economic activity within a metropolitan area, I concentrate on two questions: Do cities with an earnings tax tend to have lower per capita income than their surrounding suburbs? And how big are the quantitative effects of the city earnings tax on per capita income growth?

I begin my investigation by estimating a regression. The dependent variable is the ratio of the city's per capita income to the MSA's per capita income; that is, C/MSA(90). The independent variable is the city earnings tax rate. Two sets of regressions are reported, one for the ratio in 1990 (variable name, C/MSA(90)) and the other for the ratio in 2000 (variable name, C/MSA(00)). The tax rate variable, denoted τ, is the earnings tax rate for 2000. The results are reported here:

$$C/MSA(90) = 0.953 - 0.05 * \tau$$
$$(0.014) \quad (0.014)$$

Adj Rsq = 0.1 SEE = 0.1289

Legend: Standards errors are reported in parentheses below the coefficient estimates

and

$$C/MSA(00) = 0.93 - 0.051 * \tau$$
$$(0.015) \quad (0.015)$$

Adj Rsq = 0.1 SEE = 0.135

Legend: Standards errors are reported in parentheses below the coefficient estimates

Note that the two regressions are qualitatively and quantitatively very similar. Thus, the results are robust to the changes that emerged during the decade of the 1990s. The negative coefficient on the earnings tax rate variable implies that higher earnings tax rates are associated with lower per capita incomes in the city,

relative to its suburbs. This coefficient is statistically significant at the five-percent confidence level. This evidence is consistent with the notion that the earnings tax induces people to move out of the city and into the suburbs to avoid it.

Note that the regression's R-squared is 0.1. That means that movements in the earnings tax rate accounts for about 10 percent of the variation in the ratio of city per capita income to MSA per capita income. This is a sizeable fraction of the variation considering that it is the only variable and the sample consists of 101 cities.

The regression indicates that a city with a one-percentage-point earnings tax rate will typically report per-capita income in the city part that is five percent less than per capita income in the MSA when compared against a city with no earnings tax. To illustrate this point further, suppose that City A has no earnings tax, while City B has a one percent earnings tax rate. Other things being equal, the regression suggests that we should expect City B's city-to-MSA per capita ratio to be 5.1 percent lower than City A's city-to-MSA ratio. To put that in dollar terms, The average per capita income in 1990 was $13,076. Holding MSA per capita income constant, a one percent increase in the earnings tax rate translates to city per capita income falling by $667.

The decline would be even larger with 2000 data. Average city per capita income was $19,518. Therefore, a one-percentage-point increase in the earnings tax rate would, on average, result in city per capita income falling by $995.

Overall, the cross-state data suggests that changes in the city earnings tax are systematically related to changes in the ratio of city income to MSA income. Moreover, the regression estimates show that the partial correlation coefficient is large, suggesting that cities with higher earnings tax rates are systematically smaller, relative to their suburbs, than cities with lower earnings tax rates. The evidence suggests that people may seek to avoid the tax by moving outside the city.

Of course many other features can account for the correlation reported in this paper. In the next section, I develop an economic framework that explains how the city earnings tax can affect the location decision. The chief insight that is relevant for city economic development is intuitive: the earnings tax creates a distortion that lowers the return to locating productive activity in the city, making the suburbs more attractive.

THE ENGINES OF GROWTH

Economic research made significant theoretical advances in the early 1990s. Lucas (1988) and Romer (1986) extended the efforts that can be traced back to Solow's (1956) seminal work. Modern growth theory is based on an important correlation: countries that grow faster tend to have higher rates of investment in reproducible capital. Physical and human capital accumulation is the engine of economic growth.

Exogenous vs. Endogenous Growth

In the basic neoclassical growth model, Solow described a world in which the standard of living would converge

The cross-state data suggests that changes in the city earnings tax are systematically related to changes in the ratio of city income to MSA income.

Economists refer to the process in which capital is being accumulated as "capital deepening."

across different geographic areas. Solow's convergence prediction rested on two key assumptions. First, reproducible physical capital is combined with labor to produce a country's goods and services. Second, the technology that combines physical capital and labor is perfectly replicable. For example, technology in the United States can be transferred to any other country. In the Solow model, economic growth is driven by exogenous technological progress. One can think of exogenous growth as coming from nature. People simply apply technological insights into new production methods and new products. The total amount of stuff produced increases.

In each of the three Missouri cities examined, redistribution occurs within the metropolitan area. The Solow model would account for this redistribution by saying that capital is being accumulated in those parts of the metropolitan area that are capital poor at the beginning of the period. The suburb part of the metropolitan area is catching up to the city part.

To illustrate this point, consider a Solow model economy in which there is one irreproducible factor that matters for economic activity: land. Land in the city is limited. As capital is accumulated in the city, land shortages develop. The tradeoff between distance from the city and the higher return to capital in the suburbs eventually turns in the suburbs' favor. As capital accumulates in the suburbs, the return to capital may continue to be higher there because land is readily available. Economists refer to the process in which capital is being accumulated as "capital deepening." In our example, there is capital deepening in the suburb part while the city part stagnates. During the period of capital deepening in the suburb, the suburb would be growing faster than the city. Hence, it is possible to account for the redistribution from city part to suburb part with a modified Solow model that includes land as an input.

Eventually, the return to capital in the suburbs would decline and returns to capital in the city would become equal to those in the suburbs. The distribution of output per worker would be uniform across the metropolitan area. Productivity would be the same in both the city part and the suburb part.

In the long run, however, the Solow model predicts that growth in both the city part and suburb part would be unrelated to policy variables like the city earnings tax. In separate papers, Lucas and Romer contended that convergence, and exogenous growth, may not be the right description of actual economies. In particular, there are no signs that living standards in sub-Saharan Africa are looking more like those in the United States. Lucas and Romer forwarded the notion that growth was endogenous, depending on a variety of factors peculiar to each economy, such as tax rates, "local" irreproducible natural endowments, investment in human capital (education), research and development in new technologies, and so on. Economic growth is different for different geographic locations and economic policy affects the growth rate.

Numerical Examples

To illustrate how income tax rates affect growth rates, I specify a model economy in which tax rates affect the

growth rate. My unit of observation is the metropolitan area. I am particularly interested in quantifying the impact that a change in the marginal income tax rate has on economic growth.

Suppose, for example, that there are two economies, one with no earnings tax and the other with a one percent tax rate. Suppose further that the earnings tax applies to income throughout the metropolitan area. The effect on growth will be fairly small in the short term, but because of compounding, the effect over a generation will be large.

I will use an endogenous growth model to quantify the effect that a city earnings tax has on economic growth. The crucial feature of our model is that capital accumulation drives economic growth. Here, the capital accumulation can be interpreted as either physical or human capital. Both types of capital involve a tradeoff between consumption this year and consumption in the future. People forego consumption this year to accumulate more capital. As such, this model has built into it the basic consumption-saving decision that lies at the heart of the growth literature. In this model economy, the return to capital is constant; it does not exhibit diminishing returns.

There are two equations that characterize equilibrium growth. The first is the optimum growth rate:

$$\frac{y_{t+1}}{y_t} = \rho = (\beta R)^{1/\sigma} \qquad (5.1)$$

The second characterizes the constant return to capital:

$$R = (1-\tau)A + 1 - \delta \qquad (5.2)$$

Where y is output, ρ is the economy's growth rate, β is the discount rate, R is the after-tax gross rate of return on capital, and σ is the elasticity of substitution across time.[20] In equation (5.2), the term A is the marginal product of capital, τ is the marginal tax rate and δ is the rate at which capital depreciates. Thus, equations (5.1) and (5.2) completely characterize how output, employment, and consumption will evolve over the long run.

The economics underlying these equations is straightforward. Suppose a person living in this economy is deciding how to best allocate their resources between consumption this year and consumption next year. The "price" of next year's consumption is captured by the inverse of the after-tax return, R. So anything that causes R to fall increases the price of next year's consumption. That is how an increase in the tax rate affects someone's consumption-saving decision. A higher tax, for instance, lowers the after-tax return and makes next year's consumption more expensive. As a result, people save less, reducing investment in physical and human capital. Higher tax rates result in less capital accumulation and a lower economic growth rate.

An earnings tax creates allocative inefficiencies. People consume too much each year and save too little. That translates into a reduction in their lifetime consumption. Because economic growth is slower, the size of the pie—the total resources available—is reduced.

The next issue is to compute the differences in growth rates between the economy with a city earnings tax and the one without. I examine this issue from two perspectives. First, I compute the

An earnings tax creates allocative inefficiencies. People consume too much each year and save too little.

Because of compounding, the effect on the economic landscape can be significant when viewed over horizons as short as one generation.

effect on the growth rate directly. To do so, substitute equation (5.2) into equation (5.1), and compute the growth rate with $\tau = 0$ and $\tau = 0.01$. Second, it is possible to compute two paths for personal income; one for each economy. The path is computed for a period of one generation, or 25 years. The initial value of income is the value for the St. Louis MSA in 2002. The two income paths are then compared on the basis of growth rates and on the basis of income level at the end of the 25-year horizon.

To perform the calculations, I need to assign values to the parameters. The period length is one year. Following the economic literature, I use the following parameter values: $\beta = 0.96$, $A = 1.07$, $\sigma = 1.5$. I will consider two different cases corresponding to two different marginal tax rates: $\tau = 0$ and $\tau = 0.01$. These two cases capture the marginal effect that income tax rate has on the growth rate, ρ.

The results of these two numerical analyses are displayed in Table 3.

Table 3
Growth Rates Under Two Alternative Tax Rates

τ=0	ρ=1.72%
τ=0.01	ρ=1.66%

As Table 3 shows, the growth rate in the economy where there is no city earnings tax is 1.72 percent, while the growth rate in the economy with a city earnings tax is 1.66 percent. Thus, a city earnings tax results in the growth rate falling by 0.06 percentage points on an annual basis.

That might seem small, but it can result in large differences in the size of the economy. Suppose that the initial value of the economy's income is $78 billion. (This is the 2002 personal income level in the Missouri part of the St. Louis metropolitan area). After a generation (25 years), the no-tax economy would be $1.78 billion larger than the economy with a one-percent tax rate. That is a difference of 1.5 percent.

It may be hard to imagine that a 0.06 difference in the growth rate significantly retards economic growth. However, because of compounding, the effect on the economic landscape can be significant when viewed over horizons as short as one generation. It is short-sighted to ignore such effects.

This model economy is very useful for illustrating the effects of compounding. However, the model is not designed to illustrate the effects within the metropolitan area. If, for example, the tax applied only to the city part of the metropolitan area, this model would predict that all economic activity would move to the suburb. No further investment would be undertaken in the city part. This prediction stems from our assumption that the marginal product of capital is constant. People would save in the suburb where they receive a higher after-tax return.

In order to account for the redistribution within the metropolitan area, I modify the model so that the marginal product of capital diminishes up to a certain level and then becomes constant. Agglomeration is a potentially useful way to explain why the city would continue to attract capital despite the city earnings tax.

In the next subsection, we turn to the issue of redistribution within the metropolitan area.

Economic Effects Within the Metro Area

The metropolitan area is divided into two parts: the city and the suburb. My chief aim is to understand the effect that a city earnings tax has on the distribution of economic growth between the city and the suburb. The basic intuition is that a city earnings tax distorts the relative price of future consumption. Since the suburb is not subject to an earnings tax, this distortion is manifested as a substitution of economic activity from the city to the suburb. The modified model economy developed in this section accounts for this substitution by assuming that capital accumulation (and production) originates in the city. With diminishing marginal product of capital, at some point the return to capital in the suburb will exceed the return to further investment in the city. When this occurs, people substitute investment from the city part to the suburb part. People make location decisions that are in their best interest. In addition to the consumption-saving decision, they have a choice between locating their capital in the city or in the suburb. They make that decision based on where they can get the highest return.

I assume that the return to capital is higher in the city than in the suburbs at low levels of capital. This assumption ensures that capital accumulation originates in the city part. The higher return in the city could be due to natural geographic features or other external factors. The bottom line is that economic activity begins in the city—where returns are initially highest—and subsequently expands to the suburbs.

There is one other key assumption. In this setup, I assume that the marginal product of capital diminishes over some range of the capital stock. For my purposes, this assumption implies that there exists a break-even point. That is, after some capital stock has been accumulated in the city part, a person is indifferent between locating additional capital in the city or beginning to accumulate capital in the suburbs. Consequently, additional capital accumulation will be located in both the city and in the suburb part. In both the city part and the suburb part, I assume the pretax returns to capital eventually attain the same minimum value.

I depict the marginal product of capital schedules for the city and the suburbs in Figure 13.

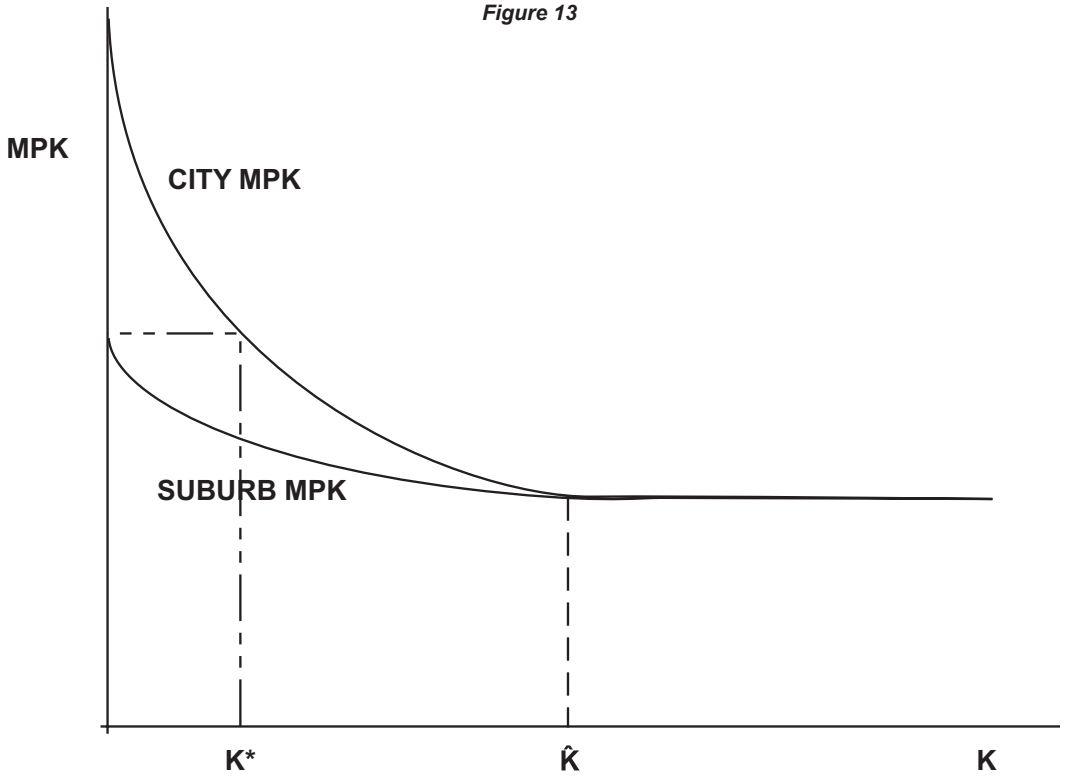
Figure 13 embodies three key characteristics. The first is an assumption regarding where capital initially locates. Note that the marginal product, or return, is higher in the city part than in the suburb part for capital levels close to zero. In Figure 13, the two MPK schedules have different vertical intercepts. This explains why people initially locate in the city part. Because the vertical intercept is higher for the city part than for the suburb part, people will locate their first units of capital there.

To illustrate this point, imagine undeveloped land. People tend to locate capital on undeveloped land based on characteristics that may reduce transaction costs. For instance, the land may be close to a river or other natural resource, or it may be more conducive to laying railroad track. I define the city part as the location at which people

People tend to locate capital on undeveloped land based on characteristics that may reduce transaction costs.

Our modified model economy can account for the development in the Springfield MSA in which the suburb part grows faster than the city part.

Figure 13



initially develop the land. The city part forms because of these innate features which translate into higher productivity for the capital stock located there. As the city expands over time, other political jurisdictions may arise to offer different combinations of public goods than the city offers. These new political jurisdictions are the suburb part.[21]

A second feature of this model is that capital accumulation will eventually spread to the suburbs. As Figure 13 shows, there is a level of the capital stock, denoted K*, at which a person is indifferent between locating an additional unit of capital in the city or in the suburb. For values of the capital stock greater than K*, the return to locating some capital in the suburb exceeds the return to locating additional capital in the city. Economic development spreads to the suburb.

The third model feature is that the marginal product of capital in both the city part and the suburb part falls until it reaches a lower bound.[22] In Figure 13, the value $\hat{K}$ represents the level of capital stock at which the marginal products of capital in the city part and in the suburb part converge to the same value.[23] Neither the city part nor the suburb part has a long-run natural advantage. If the city converges to a higher constant return, the long-run development will result in capital only being accumulated in the city part. Conversely, if the suburb part has the higher constant return, one would see long-run capital accumulation only occurring in the suburb part. With no city

earnings tax, I assume that the constant return is dictated by factors in which neither the city part nor the suburb part has any long-run comparative advantage.

There is one other point that is highlighted by Figure 13. It can explain the role that agglomeration, or any other externality, plays in the location decision. In general, externalities affect the location decision through the relative returns to capital. As Figure 13 shows, the location decision depends on which location offers the highest return. In this setup, the externality is captured by the slope of the city's MPK schedule relative to the slope of the suburb's MPK schedule. If, for example, the city's externality is quantitatively important, one would see a flatter city MPK schedule. The return to capital located in the city would diminish very slowly with additional accumulation. For example, a river might reduce operating costs so much that capital located in the city part offers a high return even when large quantities of capital have already been accumulated there. In terms of Figure 13, this natural city advantage would translate into the slope of the city MPK schedule being very flat as it moves away from the vertical axis. Other things being equal, a flatter city MPK schedule would result in K* increasing. So the larger the location externalities, the more capital will be accumulated in the city part before development begins in the suburb part.

Economic Development in Both City and Suburb

The most interesting aspect of the model economy is what happens after capital has begun to be accumulated in the suburb part of the metropolitan area. This is the region between levels denoted K* and $\hat{K}$. In this range of capital, capital accumulation will be distributed between the city part and the suburb part. During this period, the suburb part grows faster than the city part even without a city earnings tax. Hence, our modified model economy can account for the development in the Springfield MSA in which the suburb part grows faster than the city part.
To illustrate, suppose that the city MPK schedule is steeply sloped, indicating perhaps that the city's location externality is not quantitatively important. Suppose further that the suburb's MPK schedule is fairly flat. This sitution is illustrated by Figure 14. Under those conditions, the distance between K* and $\hat{K}$ shrinks. Because the suburb's MPK diminishes slowly while the city's MPK diminishes rapidly, capital accumulates at a faster rate in the suburb part. There is still an incentive to accumulate capital in the city part, but the city's growth will be slower. Consequently, the suburban economy will converge toward the city's economy.

Thus, it is possible for this model economy to account for a pattern like the one recorded in the Springfield MSA. Provided the location externality is not too great, the suburb and the city can both grow. Moreover, the suburb part can grow faster, resulting in a change in the proportion of economic activity located there.

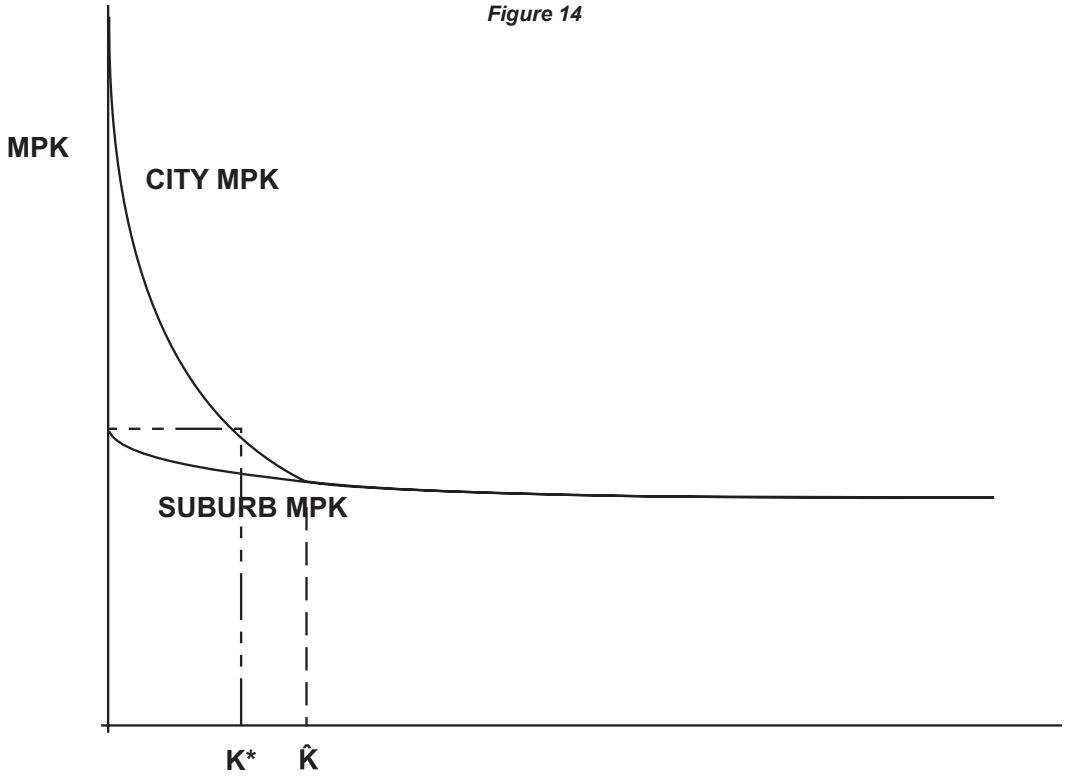
The Effects of the City Earnings Tax

I now use my model to explain the effect that the city earnings tax has on the distribution of economic activity within the metropolitan area.

The city earnings tax lessens the natural advantage the city has over the suburb.

The model economy also explains why St. Louis city contracted; it had accumulated too much capital when the city earnings tax was imposed.

Figure 14

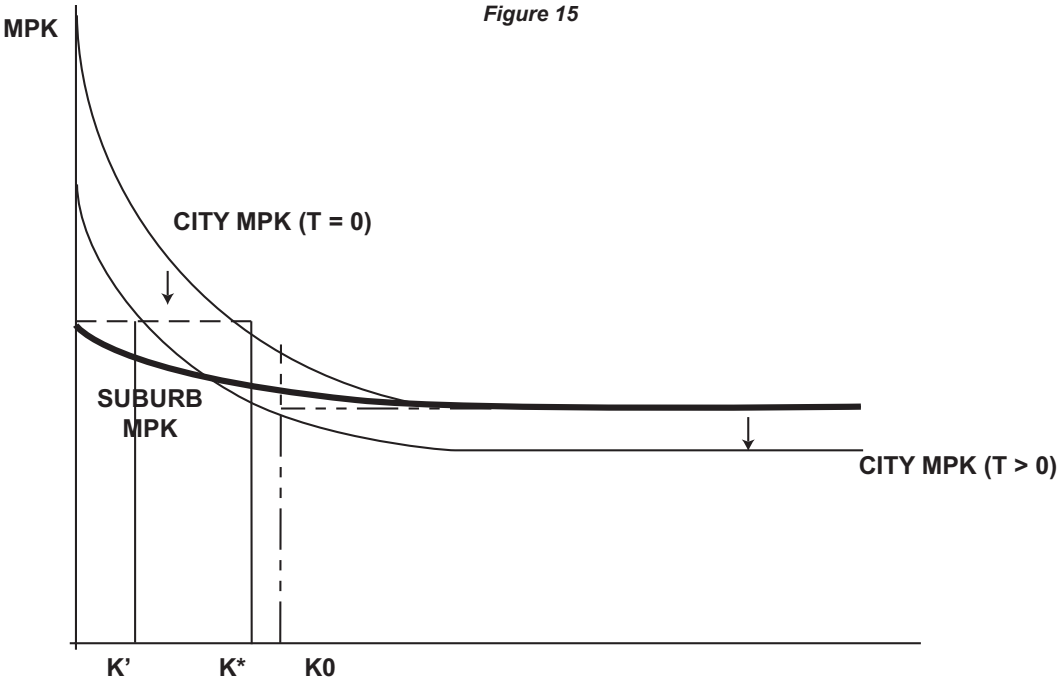


As Figure 15 shows, a city earnings tax causes the city's MPK schedule to shift down. The after-tax return to capital accumulated in the city falls as the city earnings tax is raised.

This has two important implications. First, let K' denote the value of K, the capital stock, at which the after-tax return to capital accumulated in the city is equal to the return to the initial capital stock accumulated in the suburb. Note that K' is less than K*. Hence, the city earnings tax lessens the natural advantage the city has over the suburb. Therefore, economic development will occur in the suburb part earlier than it would in the absence of an earnings tax. This amounts to a kind of tax avoidance.

Second, there is a long-run impact for the city part of the metropolitan area. In the absence of a city earnings tax, there is no long-run advantage for either the city or the suburb. However, with a city earnings tax, the suburb has a long-run comparative advantage. This result is indicated in Figure 15 by the fact that the suburb MPK no longer converges to the same lower bound as the city part does. Indeed, the after-tax lower bound for the city's MPK schedule indicates that at some level of capital, the city's MPK schedule lies below the suburb's MPK schedule. Correspondingly, capital located in the suburb dominates capital located in the city part in rate of return. As Figure 15 shows, the maximum capital stock accumulated in the city part occurs at the point where the city's MPK schedule drops below the minimum value for the suburban MPK schedule.

Figure 15



In Figure 15, the after-tax maximum city capital stock is depicted by the level K0. This result offers a way to account for the pattern in the Kansas City MSA and the St. Louis MSA. The answer depends on the level of development reached by the city part when the tax is imposed.

Recall that in the Kansas City MSA, both the city and suburb exhibited growth. The model economy can account for the Kansas City within-metropolitan area in a way that is similar to the way in which the model economy without a city earnings tax can account for the pattern in the Springfield MSA. Consider a case in which the Kansas City MSA economy starting value lies between the capital stocks denoted K0 and K'. In this range, both the city part and the suburb part can grow, but the suburb part will grow faster.

It is also possible to account for the pattern in the St. Louis MSA using Figure 15. The evidence showed that the city part of St. Louis MSA contracted while the suburb part expanded. In Figure 15, if the capital stock in the city part is greater than the quantity K0, the city part will contract. Indeed, the city economy converges monotonically to the maximum size, K0. Will the city economy contract below K0? No. At values of capital below K0, the return to capital in the city part will be greater than suburban returns. For K > K0, however, the return to capital in the city part is dominated by the return to capital in the suburb part. Thus, the model economy can account for what we observed in the St. Louis MSA: the city's capital stock will contract if K > K0 when the city earnings tax is implemented.

To illustrate the St. Louis case, I construct a simple numerical example. Suppose K0 is equal to $28.8 billion.[24] Further, suppose that at the time the city

The model further predicts that Kansas City's fortune will not continue forever.

The evidence suggests that the distortionary effect is measurable and significant.

earnings tax was implemented, the capital stock in St. Louis was $35 billion. That capital stock would be above the level consistent with the city earnings tax; that is, K > K0. If capital depreciates at 10% a year, it would take St. Louis just a couple of years to get down to the $28.8 billion level. Of course, St. Louis City has been contracting for more than a couple of years. It is important to note that the rate of contraction depends on where the two MPK schedules lie relative to one another. Each MPK is subject to city- or suburb-specific shocks. Other factors besides tax rates will affect the city MPK schedule and the suburb MPK schedule, shifting them around relative to one another. The upshot is that, over time, K0 can rise or fall, thereby affecting the length of time it takes to get to a city's long-run maximum capital stock.

Overall, the model economy with diminishing returns can account for the economic developments within each of the three Missouri MSAs. In all three cases, there is capital deepening in the suburb part of the MSA. The return to capital accumulated in the suburb part is high enough to induce investment there. Capital deepening continues in the city part of the Kansas City MSA because it had not accumulated too much capital by the time it implemented its earnings tax. The model economy also explains why St. Louis city contracted; it had accumulated too much capital when the city earnings tax was imposed.

The model further predicts that Kansas City's fortune will not continue forever. The earnings tax places an upper bound on the capital stock in the city part of the MSA. Once the city reaches this upper limit, it will stagnate, while the suburbs will continue to accumulate capital. This upper bound does not exist in the metropolitan area in which no earnings tax exists. The returns to capital converge in the city part and the suburb part so that growth can continue in both parts. The earnings tax drives a wedge between the returns in the two parts of the metropolitan area, putting an upper limit on the city's productive capacity.

SUMMARY AND CONCLUSION

Do city earnings taxes matter? The evidence suggests they do. Cities with an earnings tax tend to have a smaller fraction of the metropolitan statistical area's (MSA's) income than cities with no earnings tax. Indeed, cross-state evidence suggests that a city with a one-percentage-point higher tax rate than another city will, on average, report a five-percentage-point decline in the ratio of city income to MSA income. The bottom line is that there is a noticeable difference in city income for those cities that have adopted an earnings tax.

This result goes against the conventional wisdom. Among cities that have adopted the earnings tax, it is widely believed that the earnings tax is efficient. The main argument is that the city's central business district is inelastic with respect to a small earnings tax. The city reaps the revenues from the earnings tax at little or no cost in terms of measurable reactions to the distortionary tax. This belief is bolstered by the fact that the city earnings tax rate is low; only two cities—New York and Philadephia—have

set rates above three percent. Despite such low rates, the evidence suggests that the distortionary effect is measurable and significant.

The findings in this report are important for Missouri. Both St. Louis and Kansas City have adopted an earnings tax while Springfield periodically wrestles with the idea of adopting one. The evidence indicates that Springfield has kept pace with its MSA economy better than either St. Louis or Kansas City.

I also looked for effects of an earnings tax by looking at data from cities across the United States. Evidence from this larger sample suggests that an earnings tax matters for the distribution of economic activity within the metropolitan area. Overall, the cross-state evidence is consistent with the proposition that a city earnings tax rate induces people to live outside the city to get the highest return to their business activity.

Finally, I developed a model economy that can account for the redistribution of economic activity within the metropolitan area. A key condition is that the return to capital is diminishing, at least up to a point. This model economy shows how both the city and its suburbs can grow. The chief advantage of this model is that it provides the reader with a way to think about economic growth in a metropolitan area. Moreover, it points out the key tradeoffs that affect the local economy's growth rate. This framework allows us to better understand the economic forces that are at work and how the city earnings tax affects people's decisions.

The same framework is used to demonstrate how a city earnings tax will affect the distribution of economic activity within the metropolitan area. A city earnings tax lowers the after-tax return to capital. This places an upper bound on the size of the capital stock that will be accumulated in the city. In other words, the city will develop to a certain point and then all growth will occur in the suburbs. The difference between Kansas City and St. Louis depends crucially on how much capital had been accumulated in the city before the tax was implemented. St. Louis contracted because it had accumulated more capital than could be supported with the tax in place. Capital in the city moved to the suburbs (in the case of human capital) or depreciated (in the case of physical capital). In contrast, Kansas City was small enough that the city would continue to exhibit economic growth through additional capital accumulation while the suburbs would also experience economic growth. The message for Kansas City is guarded optimism with respect to its past growth. According to the model, when enough capital is accumulated, the city's economy will stop growing.

There are two fundamental economic processes at work when there is a change in the city earnings tax rate. One is substitution: Businesses choose to locate production where the return is highest. If, for example, physical proximity is important to a business, then the suburbs are not a good substitute for the city. For other businesses, proximity to other businesses might not be as important, in which case even a small earnings tax would be enough to drive businesses out of the city. The other fundamental process is changing transportation costs. Suburban development relies on

Springfield has kept pace with its MSA economy better than either St. Louis or Kansas City.

declining transportation costs within the metropolitan area allowing more people to move to in the suburbs.

There are a number of issues that still need further research. For instance, in Missouri, the city of St. Louis tends to have a larger fraction of low income people than its suburbs. Of the individual income filers listing St. Louis City as their address, 46 percent report adjusted gross income less than or equal to $20,000. For St. Charles and St. Louis Counties, only 25 percent of income filers report adjusted gross incomes of $20,000 or less. Hence, the earnings tax may fall most heavily on low-income people. The regressivity stems from the fact that wealthier people can more easily move to avoid the tax. The problem with this preliminary evidence is that residence and work location can be different. If the suburban high-income folks are working in the city, they are still subject to the city earnings tax. The regressive aspect of the city earnings tax deserves further study.

St. Louis contracted because it had accumulated more capital than could be supported with the tax in place.

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NOTES

[1] For the purposes of this study, we focus only on Missouri MSAs that have at least three counties according to the 1990 Census. This excludes the St. Joseph and Columbia MSAs.

[2] In addition to the income tax base, cities adopt other taxes that apply to tourists. The city lodging tax is frequently used to finance spending on city-provided public goods. For the purposes of this report, I will ignore all tax bases other than income.

[3] This example is particularly salient to Missouri because both Kansas City and St. Louis are home to a Federal Reserve District Bank.

[4] See, for example, Osbourne and Pitchik (1987) consider price-setting in economies in which there is more than one period. The other extensions also consider differential cost structures, including differences in both the fixed and variable cost level. I refer the advanced, interested reader to Fudenberg and Tirole (1993). They present a general description of the location problem in a simultaneous-move setting.

[5] The three-firm case is interesting because there is no equilibrium in the simultaneous move setting. In other words, the three firms cannot choose where to locate without pre-play communication or collusion.
In Prescott and Visscher, each successive firm knows the decisions used by the previous movers. As such, the third firm knows the decision rules that the second and first firm use. The third firm, therefore, can determine where Firm 1 and Firm 2 will locate. Firm 3 chooses its location to maximize its market share, taking into account where Firm 1 and Firm 2 will locate. Similarly, seeing where Firm 3 locates, and knowing the decision used by Firm 1, Firm 2 applies its decision rule—the same one that Firm 3 believed Firm 2 would use—and chooses the location that maximizes it market share. Lastly, Firm 1 sees where Firm 2 and Firm 3 have located, applies it decision rule—the same one that Firms 2 and 3 believed it would—and chooses its location. Prescott and Visscher use backward induction, therefore, to solve this sequential problem.
In practice, Firm 1 moves, followed by Firm 2 then Firm 3. To illustrate the Prescott-Visscher equilibrium, suppose that Firm 1 chooses its location to lie in the [0,0.5) interval. Firm 1 one will choose to locate at position 0.25. Firm 2 follows and chooses location 0.75. Firm 3 locates at 0.5. Thus, they find that consumers living on the interval [0, 0.375) trade with Firm 1, consumers living on the interval, (0.625, 1] trade with Firm 2, and consumers living on the interval (0.375, 0.625) trade with Firm 3. Firm 3 is the last mover, suffering the smallest market share. Here, we see that there is a disadvantage associated with being the last mover in this sequential decision problem; Firm 3 is the residual claimant.

[6] Here, the term local refers to the notion that the public good is consumed by people living in the specific location.

[7] The interested reader is referred to papers by Samuelson (1969) and Richter (1978) for further reading.

[8] More precisely, St. Louis residents must pay a tax on their earnings and businesses must pay a payroll tax on their employees. I combine the two here because both have the same qualitative impact, providing an incentive to locate outside the City boundaries. Note also that the earnings tax revenues are reported for fiscal years defined as July 1 – June 30.

[9] Note that the earnings tax receipts for Kansas

City are reported for the fiscal year, which begins on May 1 and ends on April 30.

[10] Though outside the scope of this report, a potentially interesting question is, Does the earning tax affect the amplitude of the business cycle swings in St. Louis and Kansas City?

[11] Personal income measures the pre-tax sum of payments received by the person living in a county. It is important to note that this evidence does not bear on where people work.

[12] By indexing to 1969 values, I avoid initial differences in income levels between the two areas. Personal income in St. Louis City in 1969 was around $7.6 billion while the sum of income in the suburban metropolitan area was slightly above $5.4 billion.

[13] Using Jackson County as the measure of the city part of Kansas City MSA yields another difference when compared with the city part of St. Louis MSA. Personal income in the city part of Kansas City was $20.3 billion in 2002 while aggregate personal income in the suburb part as $12.4 billion. The city part of the MSA economy was larger than the suburb part in Kansas City while the opposite is true in St. Louis.

[14] The Census Bureau also defines Primary Metropolitan Statistical Areas (PMSA) and Consolidated Metropolitan Statistical Areas (CMSA). In the most recent definitions, PMSA and CMSA have been eliminated. Rather, for very large cities, the MSA is divided into a collection of metropolitan divisions. For instance, the Boston MSA consists of four metropolitan divisions: Essex County, Cambridge-Newton,Framingham, Boston-Quincy, and Rockingham County-Strafford County, NH.

[15] For the interested reader, the list of all MSAs and their counties are listed in Appendix A.

[16] The interested reader will note that Miami, Florida MSA is not included. The results reported here are not sensitive to the three-county rule.

[17] Accordingly, the data are for fiscal year 2002. For Philadelphia, the data are for fiscal year 2004. For Saginaw, MI, the data are taken for fiscal year 2005. Data for Kalamazoo, MI, Portland, OR, Steubenville, OH, and Youngstown, OH are not available.

[18] Obviously, the term low-reliance applies to cities that implement a city earnings tax and not to the majority of cities that eschew the earnings tax.

[19] The correlation coefficient for the group of nine cities that rely more than 35 percent on the city earnings tax is 0.67.

[20] The easiest way to think about this is that the typical consumer chooses how much to consume this year versus how much to consume next year. There is an indifference curve that characterizes the tradeoff between these two different consumptions. The term σ captures the curvature of this indifference curve.

[21] The city land area cannot be determined by this model economy. Rather, I assume there is some land area that is divided up by political forces. The original developed area is the city part and the remainder is the suburb part. I treat the division as exogenously determined.

[22] Jones and Manuelli (1990) formalize the idea of a convex growth model in which the marginal product of capital has a lower bound. Note that the model economy in Section 4 is a special case of the Jones-Manuelli model that was developed by Rebelo (1991).

[23] Note that the minimum return assumption was used in the model economy developed in Section 4 of this report.

[24] This value is constructed as follows. In the United States, the capital-output ratio (K/Y) is roughly 1.6. Suppose that output per worker (Y/L) in St. Louis City is $60,000. This implies that (K/Y) times (Y/L) is the capital-labor ratio (K/L), which is equal to $96,000. Next, multiply the capital-labor ratio by 300,000 workers, yielding the value of the St. Louis capital stock at $28.8 billion.

APPENDIX A
POPULATION AND PER-CAPITA INCOME DATA BY MSA AND ITS COMPONENTS

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
Albany, NY		95,658	18,281	101,082	13,742
	Albany	294,565	23,345	292,594	16,363
	Montegomery	49,708	17,005	51,981	11,640
	Rensselaer	152,538	21,095	154,429	14,031
	Saratoga	200,635	23,945	181,276	15,644
	Schenectady	146,555	21,992	149,285	15,378
	Schoharie	31,582	17,778	31,859	11,333

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
Albuquerque, NM		448,607	20,884	384,736	14,013
	Bernalillo	556,678	20,790	384,736	13,594
	Sandoval	89,908	19,174	63,319	10,849
	Valencia	66,152	14,747	45,235	10,244
Allentown, PA		106,632	16,282	105,090	12,822
	Carbon	58,802	17,064	56,846	11,729
	Lehigh	312,090	21,897	291,130	15,458
	Northampton	267,066	21,399	247,105	14,562
Appleton, WI		70,087	22,478	65,695	14,735
	Calumet	40,631	21,919	34,291	12,904
	Outagamie	160,971	21,943	140,510	13,893
	Winnebago	156,763	21,706	140,320	13,696
Athens, GA		100,266	17,103	45,734	9,252
	Clarke	101,489	17,123	87,594	11,604
	Madison	25,730	16,998	21,050	10,997
	Oconee	26,225	24,153	17,618	15,164
Atlanta, GA		416,474	25,772	394,017	15,279
	Barrow	46,144	18,350	29,721	11,156
	Bartow	76,019	18,989	55,911	11,748
	Carroll	87,268	17,656	71,422	11,239
	Cherokee	141,903	24,871	90,204	14,849
	Clayton	236,517	18,079	182,052	13,577
	Cobb	607,751	27,863	447,745	19,166
	Coweta	89,215	21,949	53,853	13,708
	Dekalb	665,865	23,968	545,837	17,115
	Douglas	92,174	21,172	71,120	14,096
	Fayette	91,263	29,464	62,415	19,025
	Forsyth	98,407	29,114	44,083	15,763
	Fulton	816,006	30,003	648,951	18,452
	Gwinnett	588,488	25,006	352,910	17,881
	Henry	119,341	22,945	58,741	14,167
	Newton	62,001	19,317	41,808	11,641
	Paulding	81,678	19,974	41,611	12,322
	Pickens	22,983	19,774	14,432	11,442
	Rockdale	70,111	22,300	54,091	15,710
	Spalding	58,417	16,791	54,457	11,703
	Walton	60,687	19,470	38,586	11,932
Augusta, GA		195,182	17,117	44,639	10,367
	Columbia	89,288	23,496	66,031	15,372
	McDuffie	21,231	18,005	20,119	10,274
	Richmond	199,775	17,088	190,310	11,799
	Aiken	142,552	18,772	120,940	13,127
	Edgefield	24,595	15,415	18,375	10,651
Austin, TX		656,562	24,163	465,622	14,295
	Bastrop	57,733	18,146	38,263	10,300
	Caldwell	32,194	15,099	26,392	9,242
	Hays	97,589	19,931	65,614	11,422
	Travis	812,280	25,883	576,407	15,123
	Willamson	249,967	24,457	139,551	9,728
Baton Rouge, LA		227,818	18,512	219,531	12,398
	Ascension	76,627	17,858	58,214	10,482
	East Baton Rouge	412,852	19,790	380,105	13,126
	West Baton Rouge	21,601	15,773	19,419	10,255
	Livingston	91,814	16,282	70,526	9,946

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
Beaumont, TX		113,866	18,632	114,323	12,751
	Hardin	48,073	17,962	41,320	11,178
	Jefferson	252,051	17,571	239,397	12,348
	Orange	84,966	17,554	80,509	11,493
Biloxi, MS		50,644	17,809	46,319	10,036
	Hancock	42,967	17,748	31,769	10,180
	Harrison	189,601	18,024	165,365	10,434
	Jackson	131,420	17,768	115,243	11,246
Birmingham, AL		242,820	15,663	265,868	10,127
	Blount	51,024	16,325	39,248	10,168
	Jefferson	662,047	20,892	651,525	13,277
	St. Clair	64,742	17,960	50,009	10,596
	Shelby	143,293	27,176	99,358	16,237
Boston, MA		589,141	23,353	574,283	15,581
	Bristol	534,678	20,978	506,325	13,853
	Essex	723,419	26,358	670,080	17,586
	Middlesex	1,465,396	31,199	1,398,468	20,343
	Norfolk	650,308	32,484	616,087	21,091
	Plymouth	472,822	24,789	435,276	16,523
	Suffolk	689,807	22,766	663,906	15,414
	Worcester	750,963	22,983	709,705	15,500
	Rockingham (NH)	277,359	26,656	245,845	17,694
Burlington, VT		38,889	19,011	39,127	13,918
	Chittenden	146,571	23,501	131,761	16,096
	Franklin	45,417	17,816	39,980	11,678
	Grand Isle	6,901	22,207	5,318	13,940
Charleston, SC		96,650	22,414	80,414	14,093
	Berkeley	142,651	16,879	128,776	10,942
	Charleston	309,969	21,393	295,039	13,068
	Dorchester	96,413	18,840	83,060	11,884
Charlotte, NC		540,828	26,823	395,934	16,793
	Cabarrus	131,063	21,121	98,935	13,552
	Gaston	190,365	19,225	175,093	12,447
	Lincoln	63,780	18,877	50,319	12,440
	Mecklenburg	695,454	27,352	511,433	16,910
	Rowan	130,340	18,071	110,605	12,018
	Union	123,677	21,978	84,211	13,135
	York (SC)	164,614	20,536	131,497	13,306
Charlottesville, VA		45,049	16,973	40,341	12,928
	Albemarle	79,236	28,852	68,040	17,448
	Fluvanna	20,047	20,338	12,429	12,977
	Greene	15,244	19,478	10,297	12,268
Chattanooga TN		155,544	19,689	152,466	12,332
	Catoosa (GA)	53,282	18,009	42,464	11,059
	Dade (GA)	15,154	16,127	13,147	9,360
	Walker (GA)	61,053	15,867	58,340	10,575
	Hamilton	307,896	21,593	285,536	13,619
	Marion	27,776	16,419	24,860	9,274
Chicago, IL		2,896,016	20,175	2,783,726	12,899
	Cook	5,376,741	23,227	5,105,067	15,697
	Dekalb	88,969	19,462	77,932	12,657
	DuPage	904,161	31,315	781,666	21,155
	Grundy	37,535	22,591	32,337	14,474
	Kane	404,119	24,315	317,471	15,890
	Kendall	54,544	25,188	39,413	16,115

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Lake	644,356	32,102	516,418	21,765
	McHenry	260,077	26,476	183,241	17,271
	Will	502,266	24,613	357,313	15,186
Cincinnati, OH		331,285	19,962	364,040	12,547
	Dearborn (IN)	46,019	20,431	38,835	12,542
	Ohio (IN)	5,623	19,627	5,315	10,786
	Boone (KY)	85,991	23,535	57,589	13,576
	Campbell (KY)	88,616	20,637	83,866	12,603
	Gallatin (KY)	7,870	16,416	5,393	9,717
	Grant (KY)	22,384	16,776	15,737	10,356
	Kenton (KY)	151,464	22,085	142,031	13,587
	Pendleton (KY)	14,390	16,551	12,036	9,525
	Brown	41,225	17,100	34,966	10,498
	Clermont	177,977	22,370	150,187	13,338
	Hamilton	845,303	24,053	866,228	15,354
	Warren	158,383	25,517	113,909	14,615
Cleveland, OH		478,403	14,291	505,616	9,258
	Ashtabula	102,728	16,814	99,821	10,672
	Cuyahoga	1,393,978	22,272	1,412,140	14,912
	Geauga	90,895	27,944	81,129	17,587
	Lake	227,511	23,160	215,499	15,465
	Lorain	284,664	21,054	271,126	12,733
	Medina	151,095	24,251	122,354	14,852
Columbus, GA		185,781	18,276	179,278	11,961
	Russell (AL)	49,756	14,015	46,860	9,675
	Chattahoochee	14,882	14,049	16,934	8,673
	Harris	23,695	21,680	17,788	13,135
	Muscogee	186,291	18,262	179,278	11,949
Columbus, OH		711,470	20,450	632,910	13,151
	Delaware	109,989	31,600	66,929	17,437
	Fairfield	122,759	21,671	103,461	13,609
	Franklin	1,068,978	23,059	961,437	14,907
	Licking	145,491	20,581	128,300	12,864
	Madison	40,213	18,721	37,068	12,053
	Pickaway	52,727	17,478	48,255	11,490
Dallas, TX		1,188,580	22,183	1,006,877	16,300
	Collin	491,675	33,345	264,036	20,503
	Dallas	2,218,899	22,603	1,852,810	16,243
	Denton	432,976	26,895	273,525	16,105
	Ellis	111,369	20,212	85,167	9,150
	Henderson	73,277	17,772	58,543	10,692
	Hunt	76,596	17,554	64,343	11,845
	Kaufman	71,313	18,827	52,220	11,567
	Rockwall	43,080	28,573	25,604	17,982
Ft. Worth, TX		453,694	18,800	447,619	13,162
	Hood	41,100	22,261	28,981	14,961
	Johnson	126,811	18,400	97,165	12,054
	Parker	88,495	20,305	64,785	12,966
	Tarrant	1,446,219	22548	1,170,103	15,178
Davenport, IA		98,359	18,828	95,333	12,557
	Henry (IL)	51,020	18,716	51,159	12,260
	Rock Island (IL)	149,374	20,164	148,723	13,214
	Scott	158,668	21,310	150,979	13,625
Dayton, OH		166,179	15,547	182,044	9,946
	Clark	144,742	19,501	147,548	12,348

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Greene	147,886	23,057	136,731	14,384
	Miami	98,868	21,669	93,182	13,896
	Montgomery	559,062	21,743	573,809	14,495
Denver, CO		554,636	24,101	467,610	15,590
	Adams	363,857	19,944	265,038	12,615
	Arapahoe	487,967	28,147	391,511	18,777
	Denver	554,636	24,101	467,610	15,590
	Jefferson	527,056	28,066	438,430	17,310
Des Moines, IA		198,682	19,467	193,187	13,710
	Dallas	40,750	22,970	29,755	13,364
	Polk	374,601	23,654	327,140	15,365
	Warren	40,671	20,558	36,033	12,732
Ann Arbor, MI		114,024	26,419	109,592	17,786
	Lenawee	98,890	20,186	91,476	12,654
	Livingston	156,951	28,069	115,645	17,327
	Washtenaw	322,895	27,173	282,937	17,115
Detroit, MI		951,270	14,717	1,027,974	9,443
	Lapeer	87,904	21,462	74,768	13,313
	Macomb	788,149	24,446	717,400	16,187
	Monroe	145,945	22,458	133,600	13,893
	Oakland	1,194,156	32,534	1,083,592	21,125
	St. Clair	164,235	21,582	145,607	12,355
	Wayne	2,061,162	20,058	2,111,687	13,016
Evansville, IN		121,582	18,388	126,272	12,564
	Posey	27,061	19,516	25,968	12,879
	Vanderburgh	171,922	20,655	165,058	13,434
	Warrick	52,383	21,893	44,920	14,037
	Henderson (KY)	44,829	18,470	43,044	12,042
Fort Smith, AR		80,268	18,994	72,798	12,994
	Crawford	53,247	15,015	42,493	18,689
	Sebastian	115,071	18,424	99,590	12,361
	Sequoyah (OH)	38,972	13,405	33,828	9,074
Fort Wayne, IN		205,727	18,517	173,072	12,726
	Adams	33,625	16,704	31,095	11,655
	Allen	331,849	21,544	300,836	14,631
	Dekalb	40,285	19,448	35,324	12,665
	Huntington	38,075	19,480	35,427	12,509
	Wells	27,600	19,158	25,948	12,765
	Whitley	30,707	20,159	27,651	12,605
Grand Rapids, MI		197,800	17,661	189,126	12,070
	Allegan	105,665	19,918	90,509	12,498
	Kent	574,335	21,629	500,631	14,378
	Muskegon	170,200	17,967	158,983	11,345
	Ottawa	238,314	21,676	187,768	14,347
Greensboro, NC		223,891	22,986	183,521	15,644
	Alamance	130,800	19,391	108,213	13,290
	Davidson	147,246	18,703	126,677	12,597
	Davie	34,835	21,359	27,859	14,648
	Forsyth	306,067	23,023	265,878	16,151
	Guilford	421,048	23,340	347,420	15,373
	Randolph	130,454	18,236	106,546	12,102
	Stokes	44,711	18,130	37,223	12,181
	Yadkin	36,348	18,576	30,488	11,843
Greenville, SC		56,002	23,242	58,282	14,708
	Anderson	165,740	18,365	145,196	12,027

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Cherokee	52,537	16,421	44,506	10,406
	Greenville	379,616	22,081	320,167	13,918
	Pickens	110,757	17,434	93,894	11,427
	Spartanburg	253,791	18,738	226,800	12,218
Hartford, CT		121,578	13,428	139,739	11,081
	Hartford	857,183	26,047	851,783	18,983
	Litchfield	182,193	28,408	174,092	19,971
	Middlesex	155,071	28,251	143,196	19,660
	New London	259,088	24,678	254,297	16,702
	Tolland	136,364	25,474	128,699	17,849
	Windham	109,091	20,443	102,525	14,520
Hickory, NC		37,222	23,263	28,301	15,433
	Alexander	33,603	18,507	27,544	11,624
	Burke	89,148	17,397	75,744	11,604
	Caldwell	77,415	17,353	70,709	11,522
	Catawba	141,685	20,358	118,412	13,764
Houston, TX		1,953,631	20,101	1,630,553	14,261
	Chambers	26,031	19,863	20,088	12,218
	Fort Bend	354,452	24,985	225,421	16,056
	Harris	3,400,578	21,435	2,818,199	15,202
	Liberty	70,154	15,539	52,726	9,928
	Montgomery	293,768	24,544	182,201	14,283
	Waller	32,663	16,338	23,390	10,294
Huntington, WV		51,475	16,717	54,844	12,005
	Boyd (KY)	49,752	18,212	51,150	12,012
	Carter (KY)	26,889	13,442	24,340	7,996
	Greenup (KY)	36,891	17,137	86,742	11,165
	Lawrence (OH)	62,319	14,678	61,834	9,336
	Cabell	96,784	17,638	96,827	12,068
	Wayne	42,903	14,906	41,636	9,430
Indianapolis, IN		781,870	21,640	741,952	14,478
	Boone	46,107	24,182	38,147	16,764
	Hamilton	182,740	33,109	108,936	20,426
	Hancock	55,391	24,966	45,527	15,059
	Hendricks	104,093	23,129	75,717	15,526
	Johnson	115,209	22,976	88,109	14,992
	Madison	133,358	20,090	130,669	12,811
	Marion	860,454	21,789	797,159	14,614
	Morgan	66,689	20,657	55,920	13,068
	Shelby	43,445	20,324	40,307	12,935
Jacksonville, FL		735,617	20,337	672,971	13,661
	Clay	140,814	20,868	105,986	13,945
	Duval	778,879	20,753	672,971	13,857
	Nassau	57,663	22,836	42,941	13,288
	St. Johns	123,135	28,674	83,829	17,113
Johnson City, TN		55,469	20,364	49,381	13,071
	Carter	56,742	14,678	51,505	9,809
	Hawkins	53,563	16,073	44,565	10,358
	Sullivan	153,048	19,202	143,596	12,725
	Unicoi	17,667	15,612	16,549	10,727
	Washington	107,198	19,085	92,315	11,949
	Scott (VA)	23,403	15,073	23,204	9,100
	Washington (VA)	51,103	18,350	45,887	11,057
Kalamazoo, MI		77,145	16,897	80,277	11,956
	Calhoun	137,985	19,230	135,982	12,729

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Kalamazoo	238,603	21,739	223,411	14,548
	Van Buren	76,263	17,878	70,060	11,233
Kansas City, MO		441,545	20,753	435,146	13,799
	Johnson (KS)	451,086	30,919	355,054	20,592
	Leavenworth (KS)	6,691	20,292	64,371	12,822
	Miami (KS)	28,351	21,408	23,466	12,563
	Wyandotte (KS)	157,882	16,005	161,933	10,656
	Cass	82,092	21,073	63,808	12,991
	Clay	184,006	23,144	153,411	15,369
	Clinton	18,979	19,056	16,595	11,492
	Jackson	654,880	20,788	633,232	13,712
	Platte	73,781	26,356	57,867	16,737
	Lafayette	32,960	18,493	31,107	11,470
	Ray	23,354	18,685	21,971	11,213
Knoxville, TN		173,890	18,171	165,121	12,108
	Anderson	71,330	19,009	68,250	13,182
	Blount	105,823	19,416	85,969	12,674
	Knox	382,032	21,875	335,749	14,007
	Loudon	39,086	21,061	31,255	12,006
	Sevier	71,170	18,064	51,043	10,848
	Union	17,808	13,375	13,694	8,351
Lafayette, LA		110,257	21,031	94,440	12,925
	Acadia	58,861	13,424	55,882	7,952
	Lafayette	190,503	19,371	164,762	11,983
	St. Landry	87,700	12,042	80,331	7,671
	St. Martin	48,583	13,619	43,978	7,990
Lansing, MI		119,128	17,924	127,321	12,232
	Clinton	64,753	22,913	57,883	14,153
	Eaton	103,655	22,411	92,879	14,896
	Ingham	279,320	21,079	281,912	13,740
Las Vegas, NV		478,434	22,060	258,295	14,737
	Mohave (AZ)	155,032	16,788	93,497	11,933
	Clark	1,375,765	21,785	741,459	15,109
	Nye	32,485	17,962	17,781	15,454
Lexington, KY		260,512	23,109	225,366	14,962
	Bourbon	19,360	18,335	19,236	10,858
	Clark	33,144	19,170	29,496	11,655
	Jessamine	39,041	18,842	30,508	11,733
	Madison	70,872	16,790	57,508	10,029
	Scott	33,061	21,490	23,867	12,314
	Woodford	23,208	22,839	19,955	14,151
Little Rock, AR		183,133	23,209	175,795	15,307
	Faulkner	86,014	17,988	60,006	10,141
	Lonoke	52,828	17,397	39,268	10,273
	Pulaski	361,474	21,466	348,660	13,760
	Saline	83,529	19,214	64,183	11,677
Longview, TX		73,344	18,768	70,311	12,761
	Gregg	111,379	18,449	104,948	12,457
	Harrison	62,110	16,702	57,483	10,173
	Upshur	35,291	16,358	31,370	10,254
Los Angeles, CA		3,694,820	20,671	3,485,398	16,188
	Los Angeles	9,519,338	20,683	8,863,164	16,149
	Orange	2,846,289	25,826	2,410,566	19,890
	Riverside	1,545,387	18,689	1,170,413	14,510
	San Bernardino	1,709,434	16,856	1,418,380	13,358

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Ventura	753,197	24,600	669,016	17,861
Louisville, KY		256,231	18,193	269,063	11,527
	Clark	33,144	19,170	29,496	11,655
	Floyd	42,441	12,442	43,586	7,922
	Harrison	17,983	17,478	16,248	10,271
	Bullitt	61,236	18,339	47,567	10,907
	Jefferson	693,604	22,352	664,937	14,067
	Oldham	46,178	23,374	33,263	15,510
	Scott	33,061	21,490	23,867	12,314
Lynchburg, VA		65,269	18,263	66,049	12,657
	Amherst	31,894	16,952	28,578	11,185
	Bedford	60,371	21,582	45,656	14,305
	Campbell	51,078	18,134	47,572	12,061
Macon, GA		97,255	16,082	106,612	11,502
	Bibb	153,887	19,058	149,967	13,017
	Houston	110,765	19,515	82,908	12,939
	Jones	23,639	19,126	20,739	13,543
	Peach	23,668	16,031	21,189	10,989
	Twiggs	10,590	14,259	9,806	8,510
Memphis, TN		650,100	17,838	610,337	11,682
	Crittenden (AR)	50,866	14,424	49,939	9,334
	DeSoto (MS)	107,199	20,468	67,910	12,509
	Fayette	28,806	17,969	25,559	9,627
	Shelby	897,472	20,856	826,330	13,330
	Tipton	51,271	17,952	37,568	9,796
Milwaukee, WI		596,974	16,181	628,088	11,108
	Milwaukee	940,164	19,939	959,275	13,383
	Ozaukee	82,317	31,947	72,831	19,249
	Washington	117,493	24,319	95,328	14,736
	Waukesha	360,767	29,164	304,715	18,148
Minneapolis, MN		382,618	22,685	368,383	14,830
	Anoka	298,084	23,297	243,641	14,554
	Carver	70,205	28,486	47,915	16,116
	Chisago	41,101	21,013	30,521	12,526
	Dakota	355,904	27,008	275,227	17,237
	Hennepin	1,116,200	28,789	1,032,431	18,496
	Isanti	31,287	20,348	25,921	11,909
	Ramsey	511,035	23,536	485,765	15,645
	Scott	89,498	26,418	57,846	15,341
	Sherburne	64,417	21,322	41,945	13,147
	Washington	201,130	28,148	145,896	17,435
	Wright	89,986	21,844	69,710	12,687
	Pierce(WI)	36,804	20,172	32,765	12,203
	St. Croix(WI)	63,155	23,937	50,251	14,912
Montgomery, AL		201,568	19,385	187,106	12,755
	Autauga	43,671	18,518	34,222	11,182
	Elmore	65,874	17,650	49,210	10,677
	Montgomery	223,510	19,538	209,085	12,806
Nashville, TN		545,524	22,018	510,784	14,490
	Cheatham	35,912	18,882	27,140	11,868
	Dickson	43,156	18,043	35,061	11,162
	Robertson	54,433	19,054	41,494	12,077
	Rutherford	182,023	19,983	118,570	12,536
	Sumner	130,449	21,164	103,281	13,497
	Williamson	126,638	32,496	81,021	19,339

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Wilson	88,809	22,739	67,675	13,681
New London, CT		25,671	18,437	28,540	12,971
	Middlesex	155,071	28,251	143,196	19,660
	New London	259,088	24,678	254,957	16,702
	Windham	109,091	20,443	102,525	14,520
	Washington (RI)	123,456	25,530	110,006	16,182
New Orleans, LA		484,674	17,258	496,938	11,372
	Jefferson	455,466	19,953	448,306	12,845
	Orleans	484,674	17,258	496,938	11,372
	Plaquemines	26,757	15,937	25,575	9,500
	St. Bernard	67,229	16,718	66,631	10,512
	St. Charles	48,072	19,054	42,437	11,901
	St. James	21,216	14,381	20,879	8,959
	St. John the Baptist	43,044	15,445	39,996	10,454
	St. Tammany	191,268	22,514	144,508	13,605
New York, NY		8,008,278	22,402	7,322,564	16,281
	Bronx (city)	1,332,650	13,959	1,203,789	10,535
	Kings (city)	2,465,326	16,775	2,300,664	12,388
	New York (city)	1,537,195	42,922	1,487,536	27,862
	Putnam	95,745	30,127	83,941	20,536
	Queens (city)	2,229,379	19,222	1,951,598	15,348
	Richmond (city)	443,728	23,905	378,977	17,507
	Rockland	286,753	28,082	265,475	20,195
	Westchester	923,459	36,726	874,866	25,584
Newark, NJ		273,546	13,009	275,221	9,424
	Essex	793,633	24,943	778,206	17,574
	Morris	470,212	36,964	421,353	25,177
	Sussex	144,166	26,992	130,943	18,566
	Union	522,541	26,992	493,819	19,660
	Warren	102,437	25,728	91,607	16,716
Norfolk, VA		234,403	17,372	261,229	11,643
	Gloucester	34,780	19,990	30,131	13,122
	Isle of Wight	29,728	20,235	25,053	12,274
	James City	48,102	29,256	34,859	18,139
	Mathews	9,207	23,610	8,348	13,671
	York	56,297	24,560	42,422	15,742
	Currituck (NC)	18,190	19,080	13,736	12,630
Oklahoma Cty, OK		506,132	19,098	444,719	13,528
	Canadian	87,697	19,691	74,409	13,077
	Cleveland	208,016	20,114	174,253	13,182
	Logan	33,924	17,872	29,011	10,946
	McClain	27,740	18,158	22,795	11,114
	Oklahoma	660,448	19,551	599,611	13,794
	Pottawatomie	65,521	15,972	58,760	10,391
Omaha, NE		397,007	21,756	335,795	13,957
	Pottawattamie (IA)	87,704	19,275	82,628	11,734
	Cass	24,334	20,156	21,318	11,792
	Douglas	463,585	22,879	416,444	14,644
	Sarpy	122,595	21,985	102,583	13,284
	Washington	18,780	21,055	16,607	13,132
Orlando, FL		185,951	21,216	165,121	13,879
	Lake	219,528	20,199	152,104	12,450
	Orange	896,344	20,916	677,491	14,570
	Osceola	172,493	17,022	107,728	12,268
	Seminole	395,196	24,591	287,529	16,644

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
Peoria, IL		112,936	20,512	113,504	14,039
	Peoria	183,433	21,219	182,827	13,924
	Tazewell	128,485	21,511	123,692	13,681
	Woodford	35,469	21,956	32,653	13,516
Philadelphia, PA		1,517,550	16,509	1,585,577	12,091
	Burlington (NJ)	423,394	26,339	395,066	17,707
	Camden (NJ)	508,932	22,354	502,824	15,773
	Gloucester (NJ)	254,673	22,708	230,082	15,207
	Salem (NJ)	64,285	20,874	65,294	13,961
	Bucks	597,635	27,430	541,174	18,292
	Chester	433,501	31,627	376,396	20,601
	Delaware	550,864	25,040	547,651	17,210
	Montgomery	750,097	30,898	678,111	21,990
Pittsburgh, PA		334,563	18,816	369,879	12,580
	Allegheny	1,281,666	22,491	1,336,449	15,115
	Beaver	181,412	18,402	186,093	11,683
	Butler	174,083	20,794	152,013	12,747
	Fayette	148,644	15,274	145,351	9,791
	Washington	202,897	19,935	204,584	12,744
	Westmoreland	369,993	19,674	370,321	12,612
Portland, OR		529,121	22,643	437,319	14,478
	Clackamas	338,391	25,973	278,850	16,360
	Columbia	43,560	20,078	37,557	12,798
	Multnomah	660,486	22,606	583,887	14,462
	Washington	445,342	24,969	311,554	16,351
	Yamhill	84,992	18,951	65,551	12,990
	Clark (WA)	345,238	21,448	238,053	13,993
Providence, RI		173,618	15,525	169,728	11,838
	Bristol (MA)	534,678	20,978	506,325	13,853
	Bristol	50,648	26,503	48,859	17,897
	Kent	167,090	23,833	161,135	16,390
	Newport	85,433	26,779	87,194	16,819
	Providence	621,602	19,255	596,270	13,871
	Washington	123,546	25,530	110,006	16,182
Raleigh, NC		276,093	25,113	207,951	16,896
	Chatham	49,329	23,355	38,759	13,321
	Durham	223,314	23,156	181,835	15,030
	Franklin	47,260	17,562	36,414	10,959
	Johnston	121,965	18,788	81,306	11,839
	Orange	118,227	24,873	93,851	15,776
	Wake	627,846	27,004	423,380	17,195
Richmond, VA		197,790	20,337	203,056	13,993
	Charles City	6,926	19,182	6,282	11,384
	Chesterfield	259,903	25,286	209,274	17,423
	Dinwiddie	24,533	19,122	20,960	12,212
	Goochland	16,863	29,105	14,163	18,312
	Hanover	86,320	25,120	63,306	16,463
	Henrico	262,300	26,410	217,881	18,019
	New Kent	13,462	22,893	10,445	14,993
	Powhatan	22,377	24,104	15,328	15,683
	Prince George	33,047	20,196	27,394	12,714
Rochester, NY		219,773	15,588	231,636	11,704
	Genesee	60,370	18,498	60,060	12,722
	Livingston	64,328	18,062	62,372	12,585
	Monroe	735,343	22,821	713,968	16,162

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Ontario	100,224	21,533	95,101	14,601
	Orleans	44,171	16,457	41,846	11,776
	Wayne	93,765	19,258	89,123	13,313
Sacramento, CA		407,018	18,721	369,365	14,087
	El Dorado	156,299	25,560	125,995	15,703
	Placer	248,399	27,963	172,796	17,311
	Sacramento	1,223,499	21,142	1,041,219	15,265
Saginaw, MI		61,799	13,816	69,512	8,944
	Bay	110,157	19,698	111,723	12,597
	Midland	82,874	23,383	75,651	15,615
	Saginaw	210,039	19,438	211,946	12,039
St. Louis, MO		348,189	16,108	396,685	10,798
	Clinton (IL)	35,535	19,109	33,944	11,422
	Jersey (IL)	21,668	19,581	20,539	11,132
	Madison (IL)	258,941	20,509	249,238	13,272
	Monroe (IL)	27,619	22,954	22,422	13,886
	St. Clair (IL)	256,082	18,932	262,852	11,916
	Franklin	93,807	19,705	80,603	11,606
	Jefferson	198,099	19,435	171,380	12,226
	Lincoln	38,944	17,149	28,892	11,123
	St. Charles	283,883	23,592	212,907	7,720
	St. Louis	1,016,315	27,595	993,529	11,173
	Warren	24,525	19,690	19,534	11,640
Salt Lake City, UT		181,743	20,752	159,936	13,482
	Davis	238,994	19,506	187,941	11,611
	Salt Lake	898,397	20,190	725,956	12,222
	Weber	196,533	18,246	158,330	11,637
San Antonio, TX		1,144,646	17,487	935,933	10,884
	Bexar	1,392,931	18,363	1,185,394	11,827
	Comal	78,021	21,914	51,832	13,400
	Guadalupe	89,023	18,430	64,873	11,330
	Wilson	32,408	17,253	22,650	9,728
San Francisco, CA		776,733	34,556	723,959	19,695
	Marin	247,289	44,962	230,096	28,381
	San Mateo	707,161	36,045	649,623	22,430
Savannah, GA		131,510	16,921	137,560	10,978
	Bryan	23,417	19,794	15,438	11,083
	Chatham	232,048	21,152	216,935	12,983
	Effingham	37,535	18,873	25,687	10,865
Scranton, PA		76,415	16,174	81,805	11,108
	Columbia	64,151	16,973	63,202	10,959
	Lackawanna	213,295	18,710	219,039	12,358
	Luzerne	319,250	18,228	328,149	12,002
	Wyoming	28,080	17,452	28,076	11,628
Seattle, WA		563,374	30,306	516,259	18,308
	Island	71,558	21,472	60,195	13,940
	King	1,737,034	29,521	1,507,319	18,587
	Snohomish	606,024	23,417	465,642	15,769
Shreveport, LA		200,145	17,759	198,525	11,663
	Bossier	98,310	18,119	86,088	11,317
	Caddo	252,161	17,839	248,253	11,604
	Webster	41,831	15,203	41,989	9,191
Springfield, MO		151,580	17,711	140,494	11,878
	Christian	54,285	18,422	32,644	10,862
	Greene	240,391	19,185	207,949	12,468

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Webster	31,045	14,502	23,753	9,116
Springfield, MA		152,082	15,232	156,983	11,584
	Hampden	456,228	19,541	456,310	14,029
	Hampshire	152,251	21,685	146,568	14,414
	Franklin	71,535	20,672	70,092	13,944
Steubenville, OH		19,015	17,830	22,125	11,362
	Jefferson	73,894	16,476	80,298	11,001
	Brooke (WV)	25,447	17,131	26,992	11,656
	Hancock (WV)	32,667	17,724	35,233	12,464
Syracuse, NY		147,306	15,168	163,860	11,351
	Cayuga	81,963	18,003	82,313	11,671
	Madison	69,441	19,105	69,120	12,334
	Onondaga	458,356	21,336	468,973	14,703
	Oswego	122,377	16,853	121,771	11,792
Tampa, FL		303,477	21,953	280,015	13,277
	Hernando	130,802	18,321	101,115	11,864
	Hillsborough	998,948	21,812	834,054	14,203
	Pasco	344,765	18,439	281,131	11,732
	Pinellas	921,482	23,497	851,659	15,712
Terre Haute, IN		59,614	15,728	57,483	10,527
	Clay	26,556	16,364	24,705	10,538
	Vermillion	16,788	18,579	16,773	11,217
	Vigo	105,848	17,620	106,107	11,973
Toledo, OH		313,619	17,388	332,943	11,894
	Fulton	42,084	18,999	38,498	12,467
	Lucas	455,054	20,518	462,361	13,778
	Wood	121,065	21,284	113,269	13,853
Tulsa, OK		393,049	21,534	367,302	15,434
	Creek	67,367	16,191	60,915	10,608
	Osage	44,437	17,014	41,645	11,123
	Rogers	70,641	19,073	55,170	12,235
	Tulsa	563,299	21,115	503,341	14,742
	Wagoner	57,491	18,272	47,883	11,839
Baltimore, MD		651,154	16,978	736,014	11,994
	Anne Arundel	489,656	27,578	427,239	18,509
	Baltimore	754,292	26,167	629,134	18,658
	Carroll	150,897	23,829	123,372	16,320
	Harford	218,590	24,232	182,132	16,612
	Howard	247,842	32,402	187,328	22,704
	Queen Anne's	40,563	26,364	33,953	17,489
Washington, D.C.		572,059	28,659	606,900	18,881
	Calvert (MD)	74,563	25,410	51,372	17,521
	Charles (MD)	120,546	24,285	101,154	16,555
	Frederick (MD)	195,277	25,404	150,208	16,571
	Montgomery (MD)	873,341	35,684	757,027	25,591
	Prince George's (MD)	801,515	23,360	729,268	17,391
	Arlington (VA)	189,453	37,706	170,936	25,633
	Clarke (VA)	12,652	24,844	12,101	15,657
	Culpeper (VA)	34,262	20,162	27,791	14,122
	Fairfax (VA)	969,749	36,888	818,584	24,833
	Fauquier, (VA)	55,139	28,757	48,741	19,195
	King George (VA)	16,803	21,562	13,527	15,365
	Loudon (VA)	169,599	33,530	86,129	20,757
	Prince William (VA)	280,813	25,641	215,686	17,833
	Spotsylvania (VA)	90,395	22,536	57,403	15,192

City	County	2000 Population	2000 Income per capita	1990 Population	1990 Income per capita
	Stafford (VA)	92,446	24,762	61,236	15,917
	Warren (VA)	31,584	19,841	26,142	13,580
	Berkeley (WV)	75,905	17,982	59,253	11,832
	Jefferson (WV)	42,190	20,441	35,926	13,249
Wheeling, WV		31,419	17,923	34,882	12,665
	Belmont (OH)	70,226	16,221	71,074	10,329
	Marshall	35,519	16,472	37,356	10,328
	Ohio	47,427	17,734	50,871	12,348
Wichita, KS		344,284	20,647	304,011	14,516
	Butler	58,482	20,150	50,580	13,260
	Harvey	32,869	18,715	31,028	12,725
	Sedgwick	452,869	20,907	403,662	14555
Youngstown, OH		82,026	13,293	95,732	8,544
	Columbiana	112,075	16,655	108,276	10,567
	Mahoning	257,555	18,818	264,806	11,668
	Trumbull	225,116	19,188	227,813	12,899

APPENDIX B
CITY TAX SUMMARY—RATES AND BASE MEASURES

City	Tax Rate	Definition of Taxable Income
Indianapolis, IN	0.7	Federal AGI
Allentown, PA	1	wages, bus profits, other
Kalamazoo, MI	1	wages, other
Kansas City, MO	1	wages, other
Lansing, MI	1	Federal AGI
Pittsburgh, PA	1	wages, other
St. Louis, MO	1	wages, other
Portland, OR	1.25	Federal AGI
Grand Rapids, MI	1.3	Federal AGI
Louisville, KY	1.45	wages
Saginaw, MI	1.5	Federal AGI
Cleveland, OH	2	wages, bus profits, other
Columbus, OH	2	wages, bus profits, other
Steubenville, OH	2	Federal AGI
Cincinnati, OH	2.1	Federal AGI
Dayton, OH	2.25	Federal AGI
Lexington, Ky	2.25	wages
Youngstown, OH	2.25	Federal AGI
Scranton, PA	3.4	wages, bus profits, others
Toledo, OH	2.51	Federal AGI
Detroit, MI	2.75	Federal AGI
New York, NY	3.65	Federal AGI
Philadelphia, PA	4.54	wages, bus profits

Legend: Tax rate information is taken from various city sources, including Comprehensive Annual Financial Reports, between 2001 and 2003.

NOTES

ABOUT THE SHOW-ME INSTITUTE

The Show-Me Institute is a research and educational institute dedicated to improving the quality of life for all citizens of Missouri.

The Institute's scholars study public policy problems and develop proposals to increase opportunity for ordinary Missourians. The Institute then promotes those solutions by publishing studies, briefing papers, and other educational materials. It also forms constructive relationships with policymakers and the media to ensure that its research reaches a wide audience and has a major impact on public policy.

The work of the Institute is rooted in the American tradition of free markets and individual liberty. The Institute's scholars seek to move beyond the 20th-century mindset that every problem has a government solution. Instead, they develop policies that respect the rights of the individual, encourage creativity and hard work, and nurture independence and social cooperation.

By applying those principles to the problems facing the state, the Show-Me Institute is building a Missouri with a thriving economy and a vibrant civil society—a Missouri that leads the nation in wealth,freedom, and opportunity for all.

BOARD OF DIRECTORS

President Rex Sinquefield, a native of St. Louis, is the co-founder and past co-chairman of Dimensional Fund Advisors Inc. an investment management firm in Santa Monica, CA.

Chairman R. Crosby Kemper III is the executive director and CEO of the Kansas City Public Library. Previously he served as the chairman and CEO of UMB Financial Corporation and UMB Bank. He resides in Kansas City.

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Bevis Schock is a lawyer in private practice in St. Louis.

Menlo Smith is CEO of Sunmark Capital Corp, headquartered in St. Louis, and chairman of the executive committee of Enterprise Mentors International.

Staff

Jason Hannasch is the vice president for operations at the Show-Me Institute. He previously served as the executive director of Citizens for Home Rule and Empower St. Louis.

Tim Lee is the Show-Me Institute's editor. Previously he was the staff writer at the Cato Institute in Washington, DC.

7777 Bonhomme Ave. Suite 2150
St. Louis, MO 63105
314-726-5655

www.showmeinstitute.org