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

NEW EVIDENCE OF THE EFFECTS OF CITY EARNINGS TAXES ON GROWTH

(With foreword and new charts, 2013)

By Howard J. Wall

FOREWORD: EVIDENCE ON EARNINGS TAXES

By David Stokes and Michael Rathbone

In 2006, Prof. Joseph Haslag, of the University of Missouri, studied the effects of earnings taxes in Missouri and around the nation. (Earnings taxes are the common term for municipal income taxes.) He compared the economic growth rates as measured by total personal income for cities with and without earnings taxes and compared that to those cities' own metropolitan statistical areas (MSA). Haslag did not compare cities to each other; he compared cities to their own suburbs. Haslag's data demonstrated that cities with earnings taxes grew more slowly in comparison to their suburbs than cities without earnings taxes. The results were statistically significant, and found that a 1 percent increase in a city's earnings tax correlated with a 5 percent reduction in its real personal income as a share of the MSA. In short, city earnings taxes are associated with a measureable amount of economic activity, growth, and income moving from the central city to its suburbs.

Haslag and other Show-Me Institute policy staff members followed up on that study with subsequent papers, commentaries, and public events to elaborate on those basic findings. But

FIGURE 1

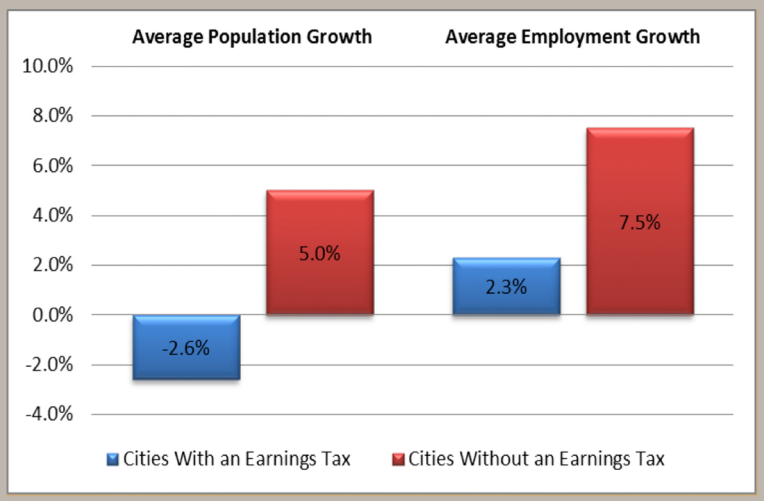
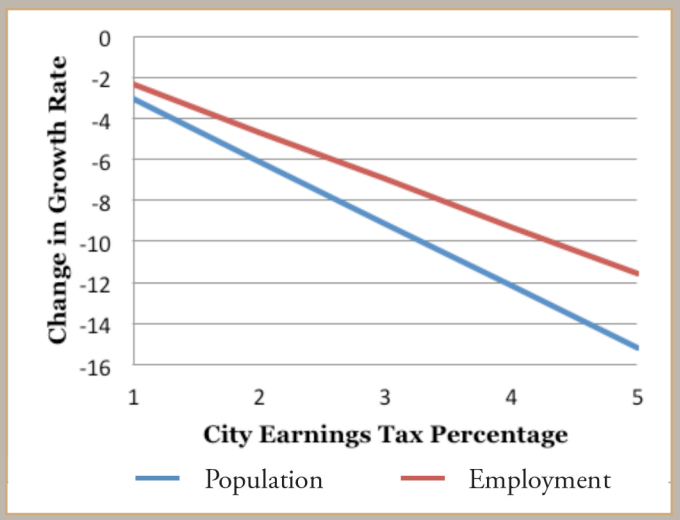
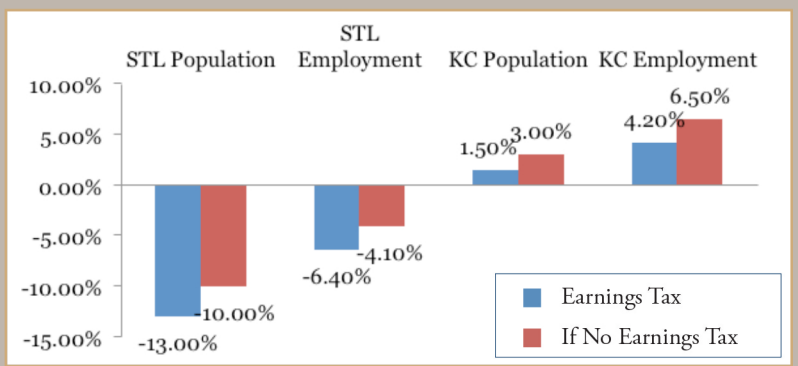


FIGURE 2: CHANGE IN POPULATION AND EMPLOYMENT GROWTH BY CITY EARNINGS TAX PERCENTAGE



Source: Results of regression analysis on cities that did and did not have an earnings tax.

FIGURE 3: POPULATION AND EMPLOYMENT GROWTH RATES BY CITY AND EARNINGS TAX



it was not until 2011 that another Show-Me Institute scholar, Prof. Howard Wall, of Lindenwood University, approached the same issue (earnings taxes) with a policy paper from a different angle. Wall considered the effects of earnings taxes in cities on population and employment growth. Like Haslag, Wall started from a universe of all 24 cities in the United States that have earnings taxes. (He was forced to eliminate three of them for insufficient data for the study.) He then compared the population and employment growth rates in the 21 remaining cities to the other mid-sized or large cities within those same states. In short, Wall limited his analysis to comparing cities within the eight states that authorize local earnings taxes. This blunts criticisms that the data is only showing nationwide trends (*i.e.*, population shifts to the Sun Belt) in action.

Wall ran a regression analysis on population and employment growth rates for the 21 cities with earnings taxes and 155 without earnings taxes in those same eight states. Wall found that the presence of a local earnings tax reduced both population and employment growth. In Wall's study, a 1 percent rise in an earnings tax was associated with a 3 percent reduction in population and a 2.3 percent reduction in employment growth as measured over a decade. Like Haslag's work, Wall's study found statistically significant evidence that local earnings taxes are related to lower growth rates (for population, personal income, and employment) in cities that adopt them.

Michael Rathbone, a policy researcher for the Show-Me Institute, has prepared

several charts and graphs to allow interested people to visualize Wall's research. Rathbone prepared a chart showing the average population and employment growth for the cities with and without an earnings tax examined in Wall's policy study (Figure 1). Rathbone also prepared a graph (Figure 2) visualizing the regressions that Prof. Wall performed for his paper showing the relationship between earnings taxes and employment and population growth. This graph is a helpful way to view the results of Wall's formula. Figure 3 is based on Prof. Wall's results showing the effect of the earnings tax on the population and employment growth rates in Saint Louis and Kansas City.

Taxes matter for economic growth, particularly income taxes. Neither Haslag nor Wall has stated that local earnings taxes are the only factor for economic growth or decline in cities. Obviously, many issues come into play. However, two major studies have now found that earnings taxes correlate with statistically significant, negative effects on growth rates. For cities, not having a local earnings tax is correlated with larger rates of economic growth. The papers may be complicated, but it is our hope that this foreword and Rathbone's charts will help give readers a better understanding of the issue.

Howard Wall's Essay

(as originally published on March 25, 2011)

The purpose of the present essay is to offer a new perspective on the possible empirical implications of city earnings taxes in Saint Louis and Kansas City.

INTRODUCTION

There are numerous explanations for the large cross-city differences in economic growth, many of which have little to do with the policy decisions of city governments. Most notably, cities in the Northeast and Great Lakes areas have declined relative to cities in the South and West in the wake of long-term trends away from manufacturing toward services, and from cold climes to warmer ones. In the face of these broad region-level trends, however, some cities have performed better than others in the same region, suggesting that city- and state-level policies play some role in determining economic outcomes.

The 1-percent earnings taxes levied in Saint Louis and Kansas City are city-level policies that have received a great deal of recent attention. On Nov. 2, Missouri voters passed Proposition A, which prohibits cities in Missouri from enacting new earnings taxes and requires voters in Saint Louis and Kansas City to approve by referendum a continuation of their existing earnings taxes. Given that earnings taxes are responsible for substantial portions of total revenues in Saint Louis and Kansas City (31 percent and 36 percent, respectively), it's not surprising that there is a great deal of interest in the implications of the proposition.[1] If the earnings taxes in

these two cities are overturned, their political leaders would face difficult decisions, although they would have 10 years to phase out the taxes.

The economic theory argument against earnings taxes is that they place a city at a relative disadvantage when people decide where to work and/or live.[2] In particular, when earnings taxes are imposed by cities such as Saint Louis and Kansas City, a person can avoid the tax relatively easily by working and living outside the city limits while still remaining within the metropolitan area. If city governments instead were to raise the same level of revenue from taxes on other, less-mobile, factors, that should lead to a smaller tax-avoidance response and a smaller distortion within the metropolitan area.

Although the theory behind replacing earnings taxes with other revenue sources is fairly straightforward, its empirical importance has not been settled. Two empirical studies have addressed the issue and have arrived at opposing policy prescriptions.[3] The purpose of the present essay is to offer a new perspective on the possible empirical implications of city earnings taxes in Saint Louis and Kansas City.

My estimates are not intended as a replacement for existing studies, but as a complement offering a different perspective.

PREVIOUS ESTIMATES

The first study on this topic, written by Show-Me Institute chief economist and University of Missouri–Columbia economics professor Joseph Haslag in 2006,[4] looked at a sample of 101 cities for 1990 and 2000 and compared the cities' per-capita personal incomes relative to those of their larger metropolitan areas. The idea behind this analysis is that if an earnings tax puts a city at a disadvantage relative to its immediate neighbors, cities with an earnings tax should perform worse relative to their neighbors than do cities without an earnings tax. Indeed, Haslag did find such a statistically significant relationship between earnings-tax rates and a city's relative per-capita income. Specifically, he found that a city with an earnings tax of 1 percent (such as Saint Louis and Kansas City) tended to have a relative per-capita income that was 5.1 percent lower than another city that did not have an earnings tax.

Although Haslag's estimation was fairly simple, it nevertheless controlled for many factors that could otherwise explain differences in cities' per capita incomes. As noted at the outset of this essay, a great deal of the differences in outcomes across cities can be attributed to broad changes by industry and region. Because Haslag looked at a city's income relative to its own metro area, he thereby controlled for any factors that would affect both the city and its larger metro area in the same overall way. This way, his analysis largely eliminated the influence of migration trends from cold to warm regions and the shift from manufacturing to service industries. This is an important consideration, because the cities with earnings taxes are concentrated in only eight states, seven of which are Rust Belt states stretching from Missouri to New York.[5] A simple estimation accounting only for cities'

levels of per-capita income would have been strongly biased toward a negative link for earnings taxes.

A second study, written in 2010 by Saint Louis University economics professors Lisa Gladson and Jack Strauss, has been cited as a counter to Haslag's findings.[6] It used a sample of 179 metropolitan areas and showed that growth in real personal income between 1969 and 2007 was unrelated to the presence of earnings taxes.[7] There are a number of data and methodological differences between this study and Haslag's, but the one difference that makes the others moot is in their units of observation: Gladson and Strauss looked at comparisons of entire metro area performance over time and Haslag looked at what happens within a particular metro area.[8] Haslag's point was that a city that imposes an earnings tax is at a disadvantage relative to other locations within the same metropolitan area. Gladson and Strauss's result is, therefore, perfectly consistent with Haslag's contention, because negative effects on the city that imposes an earnings tax will be counterbalanced to some extent by positive effects on the rest of the metro area without that tax.

NEW RESULTS

My estimates are not intended as a replacement for existing studies, but as a complement offering a different perspective. First, my results differ because my measures of economic performance differ. Specifically, whereas the 2006 study by Haslag and the 2010 study by Gladson and Strauss both looked at income, I look at population and payroll employment, because I think these variables should more directly capture any effects of earnings taxes on work and migration decisions. Second, I obtain separate estimates for the effect of one city's earnings taxes on other cities within the same metropolitan statistical area (MSA). Finally, I look at the growth rates of population and employment

An earnings-tax rate that is higher by one percentage point is associated with a population growth rate that is lower by 3.04 percentage points, and an employment growth rate that is lower by 2.32 percentage points.

TABLE 1: GROWTH IN MISSOURI CITIES, 1990–2000

City	Metro Area	Population Growth (%)	Employment Growth (%)
Kansas City	Kansas City	1.5	4.2
Saint Louis	Saint Louis	-13.0	-6.5
Maryland Heights	Saint Louis	6.3	-1.4
Cape Girardeau	Cape Girardeau-Jackson	1.4	8.2
Blue Springs	Kansas City	17.3	28.2
Jefferson City	Jefferson City	11.1	13.4
Chesterfield	Saint Louis	10.1	25.6
Joplin	Joplin	9.0	17.0
Saint Peters	Saint Louis	21.2	20.7
Saint Joseph	Saint Joseph	2.8	8.1
Lee's Summit	Kansas City	42.1	48.4
Saint Charles	Saint Louis	14.7	10.5
Columbia	Columbia	19.3	20.2
Independence	Kansas City	0.8	3.1
Springfield	Springfield	7.2	14.1

After controlling for a subset of possible explanatory variables, I find that cities with earnings taxes tend to have grown more slowly between 1990 and 2000 than did cities without earnings taxes.

between 1990 and 2000 rather than the discrete levels for each of those two years. Thus, my empirical question is: "When comparing cities to their metro area neighbors, what is the statistical relationship between their earnings-tax rates and their population and employment growth rates?"

I begin with Haslag's list of 24 cities that impose earnings taxes, and a dataset from the U.S. Census Bureau containing 1,267 cities with populations of 25,000 or more the year 2000, from all 50 states and the District of Columbia.[9] To ameliorate regional effects related to the long-term movement of people from the Rust Belt to the Sun Belt, I consider data only for the eight states in which at least one city imposes an earnings tax. After eliminating the cities for which data are incomplete, I am left with data for 176 cities, 21 of which impose an earnings tax. Table 1 summarizes the population and employment growth rates for the 15 Missouri cities in my data set, some of which are within the Saint Louis or Kansas City metro areas.

The most-general model that I estimate is:

$$\%\Delta Y_{ij} = \alpha_j + \beta t_i + \gamma T_i + \lambda Y_i + \delta D_i + \theta M_i + \varepsilon_i,$$

where $\%\Delta Y_{ij}$ is the city percentage change in population or employment in city i, which is in state j, between the years 1990 and 2000. The variable t_i is the earnings-tax rate in city i, and the variable T_i is the earnings-tax rate of another city in the same metro area as city i. The key parameters to be estimated are β and γ, which have straightforward interpretations: All else being equal, a difference of 1 percentage point in the earnings-tax rate is associated with a difference of β or γ percentage points in population or employment growth. According to the theory outlined above, β should be negative and γ should be positive.

To control for other factors that might explain differences in growth across cities, my estimation also includes: Y_i, the level of population or employment; D_i, the density of population or employment; and M_i, the share of employment in the manufacturing sector. All three of these variables are measured at their 1990 values. I include Y_i and D_i to control for two related trends in urban growth: increasing urbanization coupled with urban sprawl.[10] I include M_i to control for the decline of manufacturing. Finally, I allow cities to have state-specific intercept term α_j, to control for cross-state differences in policies and trends that may have affected city growth. The ordinary least squares estimation results are summarized in Table 2.

Notice first that the coefficients for the earnings-tax rate are negative and statistically significant, meaning that cities with an earnings tax tended to have grown more slowly than otherwise-identical cities. The link between earnings taxes and population growth is stronger than that between earnings taxes and employment growth. Specifically, an earnings-tax rate that is higher by one percentage point is associated with a population growth rate that is lower by 3.04 percentage points, and an employment growth rate

that is lower by 2.32 percentage points (*see* Figure 2 on page 2).

These results suggest large negative effects for the earnings taxes in Saint Louis and Kansas City. Specifically, without earnings taxes, the population of Saint Louis city would have contracted by only 10 percent rather than 13 percent, and its employment would have contracted by only 4.1 percent rather than 6.4 percent. Meanwhile, Kansas City's population would have grown by 3 percent rather than only 1.5 percent, and its employment would have grown by 6.5 percent rather than only 4.2 percent (*see* Figure 3 on page 2).

City earnings taxes were also associated with faster population growth in the other cities within the same metro area that did not levy such a tax. Specifically, the 1-percent earnings taxes in Saint Louis and Kansas City are associated with 1.65 percentage points more population growth, on average, for the other cities within their respective metro areas. Note, however, that earnings taxes were not associated with higher employment growth in these other cities.

These results are not the end of the story, because they do not address a number of possible issues regarding city growth. Other such studies commonly consider a number of variables that might affect growth rates, including educational attainment, racial composition, unionization, and industrial diversity.[11] The primary hurdle to including these variables in the present essay is that data at the city level is not always available. Nevertheless, because the local labor market is best defined as the entire metro area, these variables should not be as important within metro areas as between them. Also keep in mind that for any of these variables to account for the estimated negative effect of the earnings tax, their exclusion must somehow have biased my results. For example, educational attainment is almost always found to be strongly correlated with city growth, so it's reasonable to suspect that I would find it to be an important factor in explaining differences in growth in my data sample. To affect my earnings tax results, however, cities with lower educational attainment would have to be systematically more likely to have higher earnings-tax rates after controlling for all other factors.

Cities without earnings taxes tend to raise revenue in ways that are less deleterious to growth, so policymakers should look at how these hundreds of cities manage their finances without needing to impose earnings taxes.

TABLE 2: ESTIMATION RESULTS

		Population Growth		Employment Growth	
Variable	Parameter	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Earnings-tax rate (t_i)	β	-3.04*	0.92	-2.32*	0.95
Earnings-tax rate in other city in the MSA (T_i)	γ	1.65*	0.74	0.22	0.54
Initial level (Y_i)	λ	0.006*	0.002	0.018*	0.0029
Initial density (D_i)	δ	-0.68	0.47	-3.85*	0.87
Initial manufacturing share (M_i)	θ	-4.60	5.71	-3.92	5.39

Standard errors are corrected for heteroskedasticity, and an asterisk indicates that the coefficient is statistically significant. For space considerations, estimates of state effects are not shown.

Howard J. Wall is the chief of economics and director of the Hammond Institute for Free Enterprise at Lindenwood University.

Foreword by Show-Me Institute Policy Analyst David Stokes and Policy Researcher Michael Rathbone. Figures 1, 2, and 3 by Michael Rathbone.

CONCLUSIONS

This essay demonstrates that there is strong evidence for a large negative effect of earnings taxes on city growth. After controlling for a subset of possible explanatory variables, I find that cities with earnings taxes tend to have grown more slowly between 1990 and 2000 than did cities without earnings taxes. If my estimates capture the causation between earnings taxes and growth, they suggest that the effects of earnings taxes on Saint Louis and Kansas City were large. Specifically, the earnings tax would account for about one quarter of the decline in Saint Louis population over that decade, and one third of the decline in employment. For Kansas City, its population growth rate would have been twice as high over that period if it did not have an earnings tax, while its employment growth rate would have been about one and a half times as high as its actual rate.

Although my results suggest nothing specific about city revenue alternatives to earnings taxes, they are not completely silent on the issue. Roughly speaking, my finding is that an earnings tax has a larger negative effect on economic performance than does the average of the revenue-raising schemes in other cities without earnings taxes. In other words, cities without earnings taxes tend to raise revenue in ways that are less deleterious to growth, so policymakers should look at how these hundreds of cities manage their finances without needing to impose earnings taxes.

NOTES

[1] Young, Virginia, "Battle over Proposition A pits cities against Sinquefield," *St. Louis Post-Dispatch*, Oct. 10, 2010.

[2] Earnings taxes are paid by those who live or work in the respective city.

[3] As outlined below, however, because they address fundamentally different questions, these papers should not be thought of as empirical competitors.

[4] Haslag, Joseph, "How an Earnings Tax Harms Cities Like St. Louis and Kansas City," Show-Me Institute, Policy Study No. 1, March 2006. Online here: tinyurl.com/4gorjpy.

[5] The states are Indiana, Kentucky, Michigan, Missouri, New York, Ohio, Oregon, and Pennsylvania.

[6] Gladson, Lisa, and Jack Strauss, "The Earnings Tax: A Panacea or Red Herring to Economic Growth," Simon Center for Regional Economic Forecasting, Saint Louis University, 2010.

[7] Note that Gladson and Strauss did not include the level of the earnings tax, but a dummy variable to indicate that a city imposes it.

[8] Gladson and Strauss also used county-level data for Missouri only, but given that there are only two cities in Missouri with an earnings tax, the results are not meaningful.

[9] Author's calculations using the log of the ratio of the levels for 2000 and 1990. Levels data are from the County and City Data Book: 2007, U.S. Census Bureau, 14th ed., 2007. Online here: tinyurl.com/6787vur.

[10] Gladson and Strauss also include the initial level, but their interpretation is that beta convergence is occurring.

[11] See, for instance: Owyang, Michael T., Jeremy M. Piger, Howard J. Wall, and Christopher H. Wheeler, "The Economic Performance of Cities: A Markov-Switching Approach," *Journal of Urban Economics*, vol. 64, no. 3, October 2008, pp. 538–550.

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