



How Much Do Taxes Matter? What Economists Can—and Can Not—Tell NYC Policymakers

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Errors and interpretations are the responsibility of the current author.

Introduction

New York City businesses and households face heavy tax burdens. This is not only conventional wisdom; it is also documented by a number of studies. The New York City Independent Budget Office found that New York City had the highest overall local tax effort of the ten largest cities in the U.S.: New York City's local taxes absorbed nearly \$8 of every \$100 of taxable resources in 1997, about 80 percent more than the average for the next nine largest cities.¹ The District of Columbia's nationwide comparison of family tax burdens for the largest city in each state places New York City either first or second for all households with incomes of \$50,000 or more.² A recent CBC study of the city's tax competitiveness found New York City had the highest state-local tax burden for hypothetical firms in all eleven industries examined in comparison to tax burdens in eight other competitive locations.³

Because of its high tax burdens, the question of the existence and magnitude of the impact of taxes on economic growth is particularly important for New York City. In order to close significant budget gaps, the City and the State moved to raise taxes even higher during calendar year 2003, affecting income, property and other taxes paid by city and state residents. Most of these increases have been eliminated (one major exception, the 18.5 percent increase in the real property tax⁴), and, according to the Manhattan Institute, these increases would cost the city economy in excess of 90,000 jobs,⁵ about two and a half percent of total city employment.

But will the city really lose these jobs as a result of tax increases? The Fiscal Policy Institute argues that the Manhattan Institute makes its case with a flawed statistical model.⁶ The Mayor maintains that the city is worth its high cost.⁷ The unions argue that service cuts, the alternative to tax increases, would have their own devastating economic consequences.

What is the evidence of the impact of taxes and public services on economic growth? Do economists agree on the evidence? Ideally, policymakers would benefit from knowing:

- Do taxes matter? That is, do they affect the level and mix of economic activity?
If so,

¹ New York City Independent Budget Office, "Taxing Metropolis: Tax Effort and Tax Capacity in Large U.S. Cities," February 2000.

² Chief Financial Officer, "Tax Rates and Tax Burdens in the District of Columbia – A Nationwide Comparison 2004," Government of the District of Columbia, August 2005. These results are for hypothetical households of four at varying income levels. For a hypothetical household of four with an income of \$25,000, New York City ranked 22nd.

³ Donald J. Boyd, "A Simulation of Business Taxes in New York City and Other Locations," presentation to the Trustees and staff of the Citizens Budget Commission, November 16, 2006.

⁴ However, homeowners, including owners of condominium and cooperative units, have been given annual property tax rebates of up to \$400.

⁵ E.J. McMahon, "New City Tax Hikes Raise Likely Job Loss Toll," *Fiscalwatch Memo*, Manhattan Institute Center for Civic Innovation, May 27, 2003. <http://www.nyfiscalwatch.com/html/fwm_2003-06.html>

⁶ Moshe Adler, Oliver Cook and James Parrott, "Do Tax Increases in New York City Cause a Loss of Jobs? A Review of the Evidence," Special Report/Viewpoint, *State Tax Notes* February 4, 2002, pp.385-38.

⁷ Diane Cardwell, "Mayor Says New York is Worth the Cost," *The New York Times*, January 8, 2003.

- Which taxes matter the most?
- What aspects of economic activity do they affect?
- How much do they matter?

These same questions can be asked about public services. Unfortunately, many of these answers are not yet forthcoming.

This paper will assess economists' current understanding of these issues. It will show that there is general agreement that local taxes affect economic growth. Higher taxes can lead to slower growth, and lower taxes can stimulate the local economy. However, the magnitude of these effects is subject to debate. Furthermore, because a tax cut that leads to service reductions will not lead to the same economic result as a tax cut with no change in services, policymakers and the public need to understand this link as well.

Finally, because empirical studies vary in so many dimensions—on how economic activity, taxes, and public services are measured; what other variables are included in the analysis; what jurisdictions and time periods are included; and what methodology is employed—and because methodological problems continue to plague research—it would be irresponsible to present policymakers with supposedly precise estimates of the impact of any particular change in taxes.

Determinants of Local Economic Growth

Local officials struggle with the question of how they can influence economic growth and economic well-being in their jurisdictions. The reality is that many factors shaping economic growth are for the most part outside their control. The paths of the national and international economies, local or regional geographic features, major demographic trends, technological innovation, the cost of labor, energy costs, established concentrations of economic activity, and even the weather, are among the variables over which local elected officials hold limited or no sway.

It is through their fiscal decisions—what services to provide and how to pay for them—that local governments do have some power. These fiscal decisions are the tools with which government can affect private decisions about whether to come, stay, or go, and for those who stay, how much will be invested in either business activity or housing. It thus becomes of great importance to policymakers whether and how much fiscal choices—taxes and spending—affect the local economy. Of course, the primary function of taxes is to generate revenue, so it is not surprising that the question of how taxes affect economic growth takes a backseat to revenue needs.⁸

⁸ Some taxes may be introduced for the primary purpose of discouraging activities that are considered detrimental to social welfare. Effluent charges to discourage pollution and congestion pricing are such examples. For New York City under the Bloomberg administration, perhaps a reasonable example of such a tax is the heavy one on cigarettes, designed to discourage their consumption. Taxes on cigarettes and alcohol at various levels of government, however, (sometimes called “sin taxes”) have been instituted primarily for revenue-raising purposes.

Nevertheless, the impact of taxes on the economy is an important concern. Economic reasoning suggests that higher taxes that do not yield a satisfactory increase or improvement in public services discourage growth. In this context, higher taxes are simply higher costs to both households and firms. There is little disagreement among economists about this basic relationship.⁹ Yet, despite decades of econometric research, how much of a disincentive higher taxes produce is a matter of continuing debate, one confounded by the role of public services. Fortunately, within that debate there are some useful conclusions that can provide guidance to policymakers, but this guidance is surely far less specific than policymakers would like.

Changing Methods, Changing Views: Yes, Taxes Do Matter

Economists have long been interested in the factors that affect variations in economic growth among localities or regional economies. Scores of studies have been done evaluating the impacts of regional variations in costs and other variables on business location decisions and other measures of economic activity. Some studies have focused on the costs of the factors of production—land, labor and capital—while others have attempted to gauge the effects of the more ineffable elements of a local economy, such as agglomeration economies or the local “business climate.” For the most part, studies have focused on manufacturing, based on the principle that services are primarily local in their market orientation and therefore not affected by cost differentials among localities. Recent studies are more likely to address impacts on other sectors as the economy has become more service-oriented and many services have developed markets beyond their immediate environs.

Within this broader research agenda, some have specialized in determining the extent to which government activity—taxation, in particular—affects variations in economic growth. Economist Helen F. Ladd has summarized the evolution of this literature from one that concluded that taxes had no impact on local economic growth to a growing consensus that taxes do matter to local economies.¹⁰ This evolution has been the result of more sophisticated thinking about the ways taxes affect business and household location decisions, combined with more careful measurement and statistical modeling.

The early literature, summarized in a review article by John Due in 1961,¹¹ relied on studies that used simple statistical correlation analysis, interviews with business decision-makers, and the fact that taxes constituted a small percentage of total costs, to conclude that tax differentials did not affect the regional distribution of business activity. Due did suggest that there may have been some impact of tax differentials on the distribution of economic activity within a region, but that it likely would be very small. By the late 1970s and early 1980s, there was more awareness of the limitations of the existing research, but there was still not convincing evidence that taxes had an important role in economic growth.

⁹ The relationship is not so simple given that different firms and households are likely to place different values on public services.

¹⁰ Helen F. Ladd, “Effects of Taxes on Economic Activity,” in Helen F. Ladd and Wallace E. Oates, eds., *Local Government Tax and Land Use Policies in the United States: Understanding the Links*, Edward Elgar, 1998, Chapter 4, pp. 82-115.

¹¹ John F. Due, “Studies of State-Local Tax Influences on Location of Industry,” *National Tax Journal*, Vol. 14, pp. 163-173, cited in Ladd, *Ibid.*

The Econometric Literature

The unsophisticated methods of the early statistical studies gave way to more complicated econometric modeling, mostly in the form of multiple regression analysis.¹² The essence of econometric models is to explain the variation in a dependent variable (e.g., employment, business location, investment) by variations in the independent, or explanatory, variables (e.g., tax rates, public services, wages). The models estimate coefficients for each of the explanatory variables that, ideally, measure how much each explanatory variable influences the dependent variable “all other things held constant” (all other things that would affect estimation of the relationship with the dependent variable). The inclusion of other explanatory variables is a statistical method of “holding other things constant.” This is not the way the actual economic environment behaves; the econometric model is the economist’s way of attempting to create a controlled experiment as if in a laboratory.

The coefficient on, say, a tax rate, is either directly or indirectly interpretable as an “elasticity”—the extent to which a percentage change in one variable (the tax rate) induces a percentage change in the dependent variable (say, employment). In other words, elasticity measures the responsiveness or sensitivity of one variable to another. This tax coefficient would be expected to be negative if the model properly controlled for other things that affect employment; that is, higher tax rates would lead to lower employment, and vice-versa.

If the model is not properly specified to control for other factors, then the estimated coefficients will be biased—they will deviate from their “true” values. For example, if employment is positively affected by public services, and if public services are correlated with taxes but are not included in the model, then the tax variable would pick up this effect, and its relationship with employment would be biased downward in absolute value, suggesting that taxes have a smaller impact on employment than they actually do. The bias could be so great that a true negative relationship between taxes and employment (taxes down, employment up) could appear to be positive (taxes down and employment down). This kind of statistical problem, compounded by the fact that studies cover different time periods, different places, and use different variables to measure taxes and economic activity, explain why econometric studies do not provide clear-cut answers for policymakers.

One methodological advance is the use of pooled data. Instead of studying one jurisdiction over time (time-series analysis) or many jurisdictions during the same time-period (cross-section analysis), time-series and cross-sectional data are included in one analysis.¹³ In a pooled sample of localities or states, there may be features of different geographic areas that don’t change over time but are important in explaining differences in economic growth. For example, good transportation connections, cultural attitudes toward work, or other unmeasured or difficult-to-measure features may lead to higher or lower growth rates in a

¹² Econometrics is the application of statistical techniques to economic analysis. The same modeling techniques can be applied to other disciplines.

¹³ Pooled ‘time-series cross-section’ analysis has become popular among social scientists because including data for N cross-sections (e.g., states) and T time periods (e.g., years) increases the number of observations available and allows models to take into account developments over time. However, models combining cross-sectional and time-series information are vulnerable to statistical inference problems as a result of both dimensions.

locality. To address this issue, econometricians include “fixed effects” in pooled models that represent constant features of a given locale. In models that include fixed effects, the effect of taxes on economic growth is generally much greater than in models without fixed effects.

Most econometric studies have focused on taxes and business activity at the state level, where results were consistent with earlier conclusions that taxes were not significant determinants of business location decisions. Some researchers turned their attention to the impact of taxes on intraregional variations in growth. The more sophisticated of these found that localities may sometimes place barriers on growth through zoning limitations on industrial land use. Once such communities were excluded, tax effects on intraregional growth were “statistically significant.” But statistical significance is not necessarily the same as significance in a policy sense. A coefficient that is statistically significant might indicate a quantitatively small impact of taxes on employment, so that each additional job could have quite a high cost in terms of taxes forgone. The statistical significance means only that the relationship has a high likelihood of falling within a certain range of the precise (“point”) estimate of the coefficient.¹⁴ (Nevertheless, even a very small percentage change in the New York City employment base of roughly 3.6 million jobs will be a rather impressive number.)

As the 1980s progressed, more studies found some statistically significant effects of taxes on state or local economies. In general, studies that focused on impacts of tax differentials within a metropolitan area were more consistent in finding taxes to be a significant factor in determining differences in economic activity, with these results applying mostly to manufacturing and related industrial sectors. More studies that focused on interregional tax effects found significant impacts for at least some tax variables—for example, corporate and property taxes were found to have a negative impact on manufacturing employment.¹⁵ One influential time-series/cross-section analysis by L. Jay Helms (48 states for the 1965-1979 period) found that tax increases used to finance additional transfer payments (e.g., public assistance) had a significant negative effect on personal income,¹⁶ but that public service spending (highways, public health, and education, specifically) “may more than counterbalance” the effects of higher taxes.¹⁷ Subsequent research on the effect of public services and transfer payments has been mixed.¹⁸

¹⁴ For example, if a coefficient is significant at the 5 percent level, it means that if the experiment were repeated 100 times, 95 out of 100 times the result would be within a certain range (two standard deviations) of the estimated coefficient.

¹⁵ Timothy J. Bartik, “Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States,” *Journal of Business and Economic Statistics* 1985, Vol 3, No. 1 (January), pp. 14-22; also see Robert J. Newman, “Industry Migration and Growth in the South,” *Review of Economics and Statistics*, Vol. 65, 1983, pp. 76-86.

¹⁶ The negative findings for transfer payments are based on government welfare programs prior to the Personal Responsibility and Work Opportunity Act of 1996. When enough years of data have accumulated, it will be interesting to learn if post-PRWOA spending continues to be negatively associated with local economic growth.

¹⁷ L. Jay Helms, “The Effect of State and Local Taxes on Economic Growth: A Time-Series-Cross Section Approach,” *Review of Economics and Statistics*, 1985, vol. 67, no 4, pp 574-582. His model did not directly incorporate transfer payments. Rather this variable was incorporated as the difference between total revenues and total non-transfer spending, and its impact was embedded so that the tax coefficients could be interpreted as a tax increase (or decrease) that went to (or reduced) transfer payments.

¹⁸ Robert Carroll and Michael Wasylenko (“Do State Business Climates Still Matter: Evidence of a Structural Change,” *National Tax Journal*, Vol. 47, March 1994, pp. 19-37) found significant effects on

Timothy Bartik's review of the literature in the early 1990s was something of a watershed in the debate. Based on a review of over 80 studies, he concluded that taxes have large and significant negative effects on state and local economic activity.¹⁹ Of these studies, over two-thirds found at least one statistically significant negative effect of taxes on business activity (which could be one of several measures of economic activity such as employment, output, or investment). With this result, much—but not all—of the debate among economists shifted from whether taxes matter to the magnitude of their impacts. Therese McGuire, an economist who has done a good deal of research as well as policy advising, remains rather cautious not only about the conclusion that taxes matter, but also about the advisability of converting these findings into policy guidance.²⁰ More on this later.

Taxes matter, but how much?

It is one thing to say that taxes matter to economic growth, and another thing entirely to gauge the extent to which this is so. Again, statistical significance is not always the same as policy significance. Unfortunately for policymakers, a fairly wide range of estimates of the responsiveness of economic growth to taxes has been found in the literature. The literature supports the conclusion that the impact of taxes on economic growth among regions is smaller than impacts within regions or metropolitan areas. In the latter case, the effect of a tax change is much larger because other factors of importance to economic activity—for example, the availability, quality, and cost of labor, access to markets, or infrastructure—are much more uniform in smaller geographic areas.

In Timothy Bartik's 1991 review of 57 studies that measured differences in economic growth **among states**, he found that most tax elasticity estimates were in the range of -.1 to -.6, indicating a one percent to six percent decline in economic activity for every 10 percent increase in taxes. From the perspective of policymakers, this is a wide range. It is even wider when considering the full range of results, which includes estimates approaching a 157 percent increase in economic activity following a 10 percent reduction in taxes and those finding a positive association between the variables. Michael Wasylenko, after reviewing the same studies as Bartik, as well as subsequent studies, opines that the results cluster around -.2— a two percent increase in economic activity for every ten percent decrease in taxes, concluding that “taxes do not appear to have a substantial effect on economic activity

manufacturing employment of both the sales tax (negative) and spending on primary and secondary education (positive); effects were stronger in the 1970s than in the 1980s. Todd M. Gabe and Kathleen P. Bell (“Tradeoffs Between Local Taxes and Government Spending as Determinants of Business Location,” *Journal of Regional Science*, Vol. 44, No. 1, 2004, pp. 21-41), based on an analysis of over 3,700 establishments that began operation in Maine between 1993 and 1994, found that business favored municipalities that spent high amounts on public goods and services, even when these were financed by higher local taxes. However, an earlier article by Gabe (“Local Fiscal Policy and Establishment Growth,” *Journal of Regional Analysis and Policy*, Vol. 33, No. 1, 2002, pp. 57-80) reports no significant impact of local government spending on employment for 17,172 Maine establishments from 1996 to 1999.

¹⁹ Timothy J. Bartik, *Who Benefits From State and Local Economic Development Policies?*, Kalamazoo: W.E. Upjohn Institute for Employment Research, 1991.

²⁰ Therese J. McGuire, “Do Taxes Matter? Yes, No, Maybe So,” *State Tax Notes*, June 9, 2003, pp. 885-890.

among states.”²¹ He also concludes that, despite the small median effect of taxes on growth across regions, the effect will be much larger for states whose taxes deviate noticeably from comparison states.

Results for tax differentials within a metropolitan area are stronger, although there are far fewer studies. In Bartik’s review, a 10 percent change in property taxes in one locality compared to its neighbors led, on average, to a long-run change in economic activity of 19.1 percent in the opposite direction. Since that review, the results of additional studies have spanned a wide range.²² Wasylenko concludes that when a local jurisdiction changes its taxes with respect to its neighbors, the impact on its economic activity will be about four times the effect felt when a state’s or region’s taxes are changed relative to other states or regions. A “meta-analysis” (a statistical analysis of many studies) by Phillips and Goss found that interstate and intermetropolitan studies were generally in the upper range of Bartik’s estimate, while intrametropolitan estimates tended to be at the lower end of his estimated range, thus reducing the intra- and intermetropolitan differences.²³ Their meta-analysis found that when public services and fixed effects were included for intrametropolitan studies, the tax elasticity was -1.25, indicating that a 10 percent increase in taxes results in a 12.5 percent decline in economic activity. This is quite a sizable effect. In a more recent paper, Bartik puts the intermetropolitan or interstate elasticity between -.2 and -.3 and the intrametropolitan figure at -2.0.²⁴

What do these elasticities mean? Hypothetically, since the figures may not be valid for any particular state, if all state and local taxes in New York State were increased by 10 percent, with no change in public services and no change in other states’ taxes, over time the state would lose 2 percent to 3 percent of its employment to other states. The intrametropolitan studies produce significantly larger impacts.

As an alternative to looking at elasticities, another way to view these results is in terms of cost per job: If a tax cut leads to increased employment but also to a loss of tax revenues, then each job gained comes at a cost to the public sector. Bartik’s elasticity estimates of -.1 to -.6 when one state or region changes its taxes relative to others produces a cost per job between \$1,000 and \$10,000 annually;²⁵ the lower cost is associated with the higher elasticity, which generates a larger employment effect. Phillips and Goss’s results indicate a job cost

²¹ Michael Wasylenko, “Taxation and Economic Development: The State of the Economic Literature,” *New England Economic Review*, March/April 1997, p. 49.

²² Thomas F. Luce, Jr., (“Local Taxes, Public Services, and Intrametropolitan Location of Firms and Households,” *Public Finance Quarterly*, Vol. 22, No. 2, April 1994, pp. 139-167), for example, estimates that employment will change by 6 percent with a 10 percent change in taxes in the Philadelphia area. Another study (Stephen T. Mark, Therese J. McGuire, and Leslie E. Papke, “The Influence of Taxes on Employment and Population Growth: Evidence from the Washington D.C. Metropolitan Area,” *National Tax Journal* Vol. 53, No. 1, March 2000, pp. 105-124) finds an employment impact of over 20 percent for business personal property and sales taxes, but insignificant impacts of corporate and commercial property taxes in the Washington, D.C. area.

²³ Joseph Phillips and Ernest Goss, “The Effect of State and Local Taxes on Economic Development,” *Southern Economic Journal*, Vol. 62, pp. 320-33, 1995.

²⁴ Timothy J. Bartik, “Solving the Problems of Economic Development Incentives,” *Growth and Change*, Vol. 36, No. 2, Spring 2005, p. 142.

²⁵ Timothy J. Bartik, “Taxes and Local Economic Development: What Do We know and What Can We Know?” Proceedings of the National Tax Association, presentation November 14, 1994.

for a tax increase within a metropolitan area of as low as \$1,299 in their model that controls for both public services and fixed effects, this being the formulation that is likely to yield a higher (in absolute value) tax elasticity.

The high costs indicated by the lower range of the Bartik estimate suggest that a tax cut would likely have a net negative fiscal effect (taking into account secondary tax benefits associated with expanding employment), while higher elasticities indicate a larger impact on employment, a lower cost per job, and the likelihood of net positive fiscal benefits. In a more recent paper, Bartik calculates a gross cost per job as \$10,000 annually, and suggests that the additional revenue effect will reduce this to a net cost of \$7,000 for interstate tax differentials.²⁶ An intrametropolitan elasticity of -2.0, could suggest a gross cost in the \$1,000 range, so that net fiscal benefits would result from secondary effects.

Why can't economists agree?

Before turning to some research specifically on New York City, as well as two relatively recent studies of other large cities, it is useful to step back for a moment and ask why it is so difficult for economists to agree on the size of the relationship between taxes and state and local economic growth.

Econometrics is the science (or, many would argue, the art) of using statistical techniques to estimate relationships among economic variables in order to test theoretical hypotheses. No two econometric studies are exactly alike. As noted earlier, they differ in measures of economic activity, explanatory variables included, units of observation (firms, local jurisdictions, states), time periods, and data. They differ in mathematical specification and estimation techniques. No wonder there is a wide range of results. Moreover, each study is subject to econometric problems related to our understanding of how the economy works (theory), how well a statistical model can embody these relationships (model specification), and how good the data are in measuring the variables under consideration. The following concerns are hardly exhaustive, but they give a good sense of why it is hard to provide policymakers with concise estimates that will allow them to fine-tune policy.

Theory

Debates over the theoretical foundation of models testing the effects of local taxes have been somewhat less important than debates over how the testing is done. However, some theoretical issues remain.

First, one theoretical understanding that has helped clarify many of the differences in findings is the distinction between the role of tax differentials within a metropolitan area versus their role across metropolitan areas, states, or regions. Economists do agree on the fact that tax differentials should make a greater difference within a metropolitan area where other determinants of growth are otherwise quite similar. Across regions or metropolitan areas, tax differentials matter less. Here is one area in which theory and research are rather consistent.

²⁶ *Ibid.*

Second, tax effects can be complex. For example, a lower tax on capital will tend to attract a flow of capital into an area, which could result in increases in land prices. These increases could, in turn, discourage land-intensive industries (such as manufacturing), partly or wholly offsetting the stimulating effect of the initial tax decrease.²⁷

A third theoretical issue is the continued (although diminishing) focus on manufacturing firms because of the presumption that manufacturing concerns sell to markets outside their immediate region and therefore are more likely to consider alternate production locations. In addition, manufacturing industries are more capital-intensive, and most state and local taxes are taxes on capital.²⁸ However, a growing portion of services, especially in cities like New York, operate in national and international markets.

Fourth, taxes provide the source for financing public services that themselves affect economic growth. Many studies that focus on discerning the impacts of taxes on economic activity give only cursory attention to services.²⁹ The nature of the relationships can be complex. Public services may promote growth, but growth may increase demand for public services. There are other complexities. For example, as Bartik points out, businesses are only indirectly affected by education. It could be that educational institutions attract more workers to an area and/or increase the supply of skilled workers, thus lowering real wages in general and/or those for certain skilled workers.³⁰ If employers had perfect information on wages, this would mute the importance of education in employment decisions.

Data and Measurement

Most econometric research on the impact of taxes on economic activity relies on government data that have varying degrees of reliability. Furthermore, some variables of importance in economic models are not measured by the government, and substitutes must be found. These problems form the backdrop to virtually all econometric analysis. For studies that focus on regions, the problems are compounded because data available at the national level are frequently not available for smaller geographic areas such as cities. In addition to the usual problems with the quality and availability of data, studies of the effects of taxes on economic activity confront specific quandaries regarding measurement of key variables: economic activity, taxes, and public services. Each of these deserves close attention.

How is economic activity measured? Some studies use micro data to identify plant openings and closing as a way of measuring location decisions. Many studies use state or regional employment data. Some use personal income, and others use investment. All present problems of interpretation. Personal income includes components of income

²⁷ Robert J. Newman and Dennis H. Sullivan, "Econometric Analysis of Business Tax Impacts on Industrial Location: What Do We Know, and How Do We Know It?" *Journal of Urban Economics*, 1988, Vol. 23, pp. 215-234.

²⁸ Bartik, 1991, *op. cit.*, p. 43.

²⁹ For a review of this literature, see Ronald C. Fisher, "The Effects of State and Local Public Services on Economic Development," *New England Economic Review*, Vol. 57, March/April 1997.

³⁰ Bartik, 1991, *op. cit.* p. 45.

derived outside of the local economy, such as pensions and transfer payments. Investment is very difficult to measure and to obtain for localities, and deriving an investment measure for more than one locality could be prohibitively expensive. Employment growth is a net change made up of many elements (expansions, contractions, firms going out of business, etc.) that have diverse causes.

Taxes could have an impact on one measure of economic activity and not on others. Suppose that a tax on labor (either a payroll tax or a personal income tax that induces businesses to offer higher salaries in order to attract workers) leads firms to invest in technologies that allow fewer workers to produce the same output. This may result in sluggish employment growth accompanied by normal or rapid output growth. Has the tax retarded economic growth? The answer would be a definitive “yes” in a study measuring the impact of taxes on employment, but possibly a “no” in a study that measured the impact on output.³¹

How are taxes measured? Some studies use aggregate tax revenues, standardized by population or personal income. But not all taxes are likely to have the same impacts on economic activity, so this approach provides an imprecise measure. Some studies use average tax rates; others use marginal rates, which theory indicates are the more appropriate variables in shaping economic sensitivity. While this is a more refined approach, marginal rates apply at different levels of income in different states. Moreover, tax rules—such as throwback rules, allocation formulas, and depreciation schedules—can vary across states and may, in some cases, be more important to businesses than tax rates.³² These variations are captured neither in the aggregate measure of tax burden nor in measures of marginal rates. Tax incidence is also not generally captured in these studies—who ultimately pays a tax will affect its impact on the economy. Moreover, it can be argued that tax structure is even more important than tax rates—exactly what activity is subject to a given tax and what the mix of taxes is.

How are public services measured? There is agreement on the importance of including public services in models that estimate the impact of taxes on economic activity. However, incorporating government services is extraordinarily difficult:

- The output of many government services is hard to measure. Spending levels provide a very poor metric for service delivery. For example, the relationship between spending on education and educational outcomes (test scores, graduation rates, etc.) is weak. When comparing jurisdictions, cost structures may be quite different so lower spending per pupil in one location could provide the same quality of educational services as in another. (It doesn’t take much to figure out quite a few other reasons that spending alone is not a good measure of educational service—or why measures of “educational output” such as student test scores may be seriously

³¹ New York City offers a tantalizing example when its employment and output growth are compared with that of the nation. From 1986 to 2001, the city’s private sector employment grew at an average rate of just 0.3 percent, compared to national growth of 1.8 percent. Real gross city product (itself a difficult concept to measure), however, grew by 2.7 percent annually compared to national output growth of 2.8 percent over the same period.

³² Wasylenko, *op. cit.* p. 42.

flawed as indicators of the level or quality of educational services.) It is not surprising that researchers who are interested in efficiency in the provision of public services often gravitate to the collection of garbage, measuring output relatively neatly by the ton.

- Not all government services are important to businesses when making location decisions. Those that are may not be measured properly. For example, even if education were measured in a satisfactory way, is it meant to capture the quality of the labor force? If so, past education services count more heavily than current services. Current education services would likely influence economic activity long after the impacts of a tax change had been felt. Current spending on education may therefore appear to be less important to local economic activity than it truly is in the long run.

Estimation and Specification

Early studies used data for one period in time and many locations to explain differences in the level of economic activity, or the change in activity from the previous year. A method that is increasingly used is to combine observations on many localities over time. This pooling of cross-section and time-series data provides a large number of observations and hence usually more reliable and generalizable results than models that include observations for only one area. But when guiding policy for a specific locality, general results may not be appropriate.

The inclusion of “fixed effects” to control for constant conditions within specific regions generally improves specification. However, it is a relatively crude technique and thus creates other issues: The features of a region being captured by the fixed effects variable may not, in fact, be fixed over the time period under consideration; or components of the fixed effects may be correlated with other variables, producing biased coefficients that do not isolate the “pure” effect of, say, the tax rate on employment.

The lag structure of a model is quite important. Taxes may not have an immediate effect on employment. There is also the problem of reverse causality. Are tax rates going up because economic activity and government revenues have fallen? A proper lag structure recognizes these issues and allows for calculation of both short-term and long-term effects.

Omitted variables can lead to bias in the estimation of coefficients.³³ Exclusion of public services has plagued much of the research, but that has changed. (Other problems with the inclusion of public services remain.) There are other variables that may also have been omitted that are correlated with tax rates, so that their exclusion will bias the tax coefficients. For example, exclusion of tax rates in neighboring jurisdictions could bias the estimate of the tax coefficient in a specific jurisdiction within a metropolitan area. Being subject to similar economic forces, these tax rates might be correlated.

³³ If omitted variables that explain the dependent variable are not correlated with the included independent variables, coefficients will not be biased. However, the model’s explanatory power will be reduced.

Even if public services were measured correctly and included in a model, how certain is it that the model correctly represents their impact on economic growth? Growth may lead to an increase in public services as tax revenues and demands grow. Has the model controlled for reverse causation by, for instance, using previous years' public services data to explain this year's growth? Given the theoretical, specification, and measurement problems associated with public services, it is not surprising that there is disagreement on how well econometric models are able to isolate the pure effect of a change in taxes and that our understanding of which public services are important for economic growth is still incomplete.³⁴

Finally, just as public services may be partially determined by the level of economic activity, other variables that are often assumed independent may not be. For example, low wages may attract firms and thus induce an expansion of employment; but growing employment can also drive up wages. Lag structures and/or more complex estimation techniques can be used to address this problem.

None of the statistical techniques to deal with these sorts of problems is perfect. Thus, uncertainty in the interpretation and quality of results remains. Not only do economists doing empirical research disagree over the interpretation of findings, but some theoretical economists are more than a little skeptical of the entire field. Peter Kennedy's *Guide to Econometrics*³⁵ includes the following statements by some prominent economists:

- "I invite the reader to try . . . to identify a meaningful hypothesis about economic behavior that has fallen into disrepute because of a formal statistical test."
- "Models are to be used, but not to be believed."

And most damning of all:

- "We don't generally take empirical work seriously in economics. It's not the source by which economists accumulate their opinions, by and large."

These views seem overly skeptical. As research techniques improve and results are replicated, empirical work strengthens our economic understanding.

Research on New York and other Large Cities

The bulk of the literature tells us very little about New York City *per se*. One relatively old study and three recent studies, however, focus on New York City. Grieson, *et. al.* (1977) examined the impact of business taxes on various sectors of the New York City economy.³⁶

³⁴ Ronald C. Fisher, *op. cit.*

³⁵ MIT Press, 2001.

³⁶ Ronald E. Grieson, William Hamovitch, Albert M. Levenson, Richard D. Morgenstern, "The Effect of Business Taxation on the Location of Industry," *Journal of Urban Economics*, Vol. 4, Issue 2, April 1977, pp. 170-185. During the period of analysis (1962 to 1971) "the city changed from a hybrid business tax structure, most closely approximating a gross receipts tax, to another hybrid tax most closely resembling a

The researchers found a small but significant (-.35) location elasticity for manufacturing activity with respect to business taxes, but no significant elasticity for non-manufacturing activity. The model had no controls for other tax rates in the metropolitan area or for public services and was based on a relatively short time series.

A 2004 paper by Haughwout, *et al.*, explores the relationship between tax rates and tax revenues as well as the relationship between taxation and employment. The first question they address: Has taxation approached the level at which a tax increase actually leads to a fall in tax revenues?³⁷ They found that for 2001, New York City appeared to be nearing the top of its revenue hill for its income tax, meaning that an increase in the highest marginal rate would lead to a low net additional tax yields. They found that the property tax and the sales tax were not as close to the peaks of their revenue hills and therefore offered greater potential for generating additional revenues. These results depended on a model that worked through impacts on the city's real property tax base in a balanced budget model that required changes in public spending as a result of changes in tax revenues. The results do not directly link to employment effects. Nevertheless, they offer a conclusion quite relevant to the topic at hand. They find from this part of their analysis that an additional dollar of tax revenue does not deliver a full dollar's worth of public service benefits, as reflected in changes in property values. The authors offer this advice to policymakers: "Tax increases unmatched by tax-financed, compensating service benefits for taxpayers . . . will drive those taxpayers from the city."

In the other part of their analysis, the authors found that the New York City personal income tax, measured using the highest marginal rate, had a statistically significant and quantitatively important impact on employment, but no such effect was found for either the property tax (measured by the average effective tax rate) or the sales tax. (This appears to give a consistency across the two parts of their analysis.) The effect was evident when total employment was considered, but when the analysis was done separately for manufacturing³⁸ and services, the result held up only for manufacturing. For Philadelphia, the other city for which they did the employment analysis, they found the wage tax to have a significant and large impact on city employment.

The New York results indicate that a 10 percent increase in the city's top income tax rate will result in a 1.6 percent reduction in the city's share of national employment than would otherwise be the case over a three- to four-year period.³⁹ This elasticity is virtually the same when stated in terms of the level of city employment.⁴⁰ For a 10 percent reduction in the

gross profits tax." The authors used as their tax variable "tax collections divided by the gross returns to capital for the industry in the respective years."

³⁷ Andrew F. Haughwout, Robert P. Inman, Steven Craig, and Thomas Luce, "Local Revenue Hills: Evidence from Four U.S. Cities," *Review of Economics and Statistics*, May 2004. The idea that increasing rates of taxation can actually lead to declining tax revenues has a long history in the economics literature. However, it came to public prominence during the Reagan years under the name "Laffer curve," so called after its Reagan-era popularizer, the economist Arthur Laffer.

³⁸ They defined manufacturing employment as the sum of manufacturing, construction, communications, public utility, and transportation. They defined services as FIRE (finance, insurance, real estate); retail and wholesale trade; services; federal and state government employment.

³⁹ Haughwout, *et al.*, *op cit.*

⁴⁰ This holds for relatively small changes in employment.

highest marginal tax rate, this suggests a job loss of about 57,000 jobs over a three- to four-year period based on a total of almost 3.6 million jobs in 2005. The estimated elasticity of -.16 is actually on the low side compared to other studies, particularly intrametropolitan studies, to which it is probably more similar.⁴¹ Nevertheless, the elasticity estimate may be biased away from zero (larger in absolute value than their “true value”) because, as analysts at the Fiscal Policy Institute have noted, the model does not take account of the role of structural change in the 1970s as a powerful explanation of job loss.⁴²

Haughwout, *et. al.*, find that the annual loss of revenue per job created from a reduction in the highest marginal rate of the income tax is \$4,378 (2001 dollars), in the middle range of Bartik’s assessment of cost per job but significantly higher than the Phillips and Goss estimate that controls for changes in public services. If the tax cuts to generate such a tax change were permanent, the job costs would have a present discounted value of over \$146,000 (assuming a 3 percent real interest rate). Even if it is assumed that the estimates from Haughwout, *et. al.*, were valid for the time periods in their analysis, one question is whether they would hold currently. Has the city’s economy materially changed so that it may currently be less vulnerable to tax changes?

Two New York City models were developed by the Beacon Hill Institute (Suffolk University, Boston) for the Manhattan Institute. The first, the 2001 STAMP (State Tax Analysis Modeling Program) model is an econometric model that generates employment impacts and revenue changes. The authors report statistically significant impacts on employment of the property tax, the personal income tax, the sales tax, and the city corporation tax.⁴³ However, the model’s interpretation—that economic adjustments in response to taxes occur more or less instantaneously—is not reasonable. Moreover, it does not include variables to reflect public services or changes in tax rates within the region. Nevertheless, taking their results at face value, the employment effect of a change in the income tax rate is not large. For example, their results indicate that an increase in the average marginal income tax rate of .18 percentage points (from 3.35 to 3.53) would lead to a loss of 9,727 jobs. Thus, a five percent increase in the tax rate reduces employment by only three tenths of a percent. This is suggestive of an elasticity of -.05.⁴⁴

It is possible to estimate the tax revenue gained per job lost from the above tax increase. According to the 2001 STAMP model, this tax change would have a net benefit to the City

⁴¹ Since tax rates are more important within a metropolitan area, the omission of tax changes within the region would be of more significance.

⁴² Adler, Cooke, and Parrott, *op. cit.* FPI also noted the exclusion of New Jersey and Connecticut income tax variables. However, their exclusion probably biases the New York City income tax coefficient toward zero (lower in absolute value). If New Jersey and Connecticut had to raise their income tax rates at roughly the same time as New York City (and New York State), then omitting these variables from the analysis would bias the coefficient toward zero. While FPI also criticizes their use of the change in the Dow Jones average as a measure of financial sector volatility, this variable does not appear to be included in their employment analysis. The Dow and the New Jersey and Connecticut income tax rates are both included in their revenue hills analysis.

⁴³ They report at a 10 percent level of significance as compared to the more accepted 5 percent level. The sales tax coefficient would not pass a 5 percent test.

⁴⁴ Elasticity = % ch jobs/% ch tax rate = (9727/3.053 million)/(-.18/3.35)=-.003/.055=-.054 See David G. Tuerck, Jonathan Haughton, Corina Murg, and Sorin Codreanu, “Tax Changes in New York City: The New York City Tax Analysis Modeling Program,” Beacon Hill Institute, April 2002, p. 17.

of an estimated \$205 million (a gain of \$230 million from the tax increase offset by an estimated contractionary effect of \$25 million);⁴⁵ the City would be gaining \$21,000 for each job lost. Looked at in reverse, eliminating the remaining portion of the surcharge would cost the City \$21,000 per job in annual tax revenues. This cost per job figure is far larger than estimates from studies reported above.

Both the Haughwout, *et. al.*, and the 2001 NYC STAMP models have been criticized by the Fiscal Policy Institute.⁴⁶ Commenting primarily on the specifics of the Haughwout, *et. al.*, study, FPI analysts note that the results are highly sensitive to the time-period covered by the data. They argue that structural events in the 1970s distort the model's results and that using a different time-period (eliminating 1970-77 and extending the analysis to 2000) leads to the tax variable having no significant impact on employment.⁴⁷ As the critics themselves acknowledge, it is possible that shortening the time-period reduced statistical significance. Therefore, it would be worthwhile to incorporate into the analysis some adjustment for a change in structure and keep the full time period. Even the use of a dummy variable to distinguish the 1970s from the later years might prove a fruitful approach.

In sum, neither the Haughwout, *et. al.*, nor the 2001 STAMP model includes variables to measure structural change, public service provision, or changes in tax rates elsewhere within the region; nor do the models include a variable to reflect the cyclical impact of the financial sector on the city economy. Finally, both the Haughwout, *et. al.*, and Manhattan Institute models are based on data going back to the 1970s, when the City's tax data were far less reliable. Effective property tax rates based on data gathered prior to the implementation of S7000A in fiscal year 1983 should be treated with some skepticism.

How would all the appropriate adjustments affect the model's results? Some omissions, such as public services, would lead to an underestimate of the impact of taxes on employment. Others (e.g., better measures of structural change) would probably bias those coefficients away from zero (upward in absolute value). But to conclude, as FPI does, that there is no impact is not consistent with the weight of the scholarly evidence.

It is difficult to compare either of these studies to the rest of the literature in that the analyses are neither interregional nor intrametropolitan, that is, there is no control for changes in tax rates and other variables in other jurisdictions. It would be interesting to see, in particular, how adjustments to reflect structural change would affect these models. While their estimated employment effects are within the bounds of the literature, one cannot rely on the numbers from these studies, not only because of statistical problems, but also because current economic structure may well be different from what it was in earlier time periods.

Beacon Hill has also prepared the Gotham STAMP 2006 model for the Manhattan Institute which purports to address tax policy issues in a more complex way.⁴⁸ It is a computable

⁴⁵ Tuerck, *et. al.*, *Ibid.* p. 18.

⁴⁶ Adler, Cooke, and Parrott, *op. cit.*

⁴⁷ FPI reviewed a working paper that reported results for a somewhat shorter time period than the published 2004 paper. The 2004 paper uses data through 2001.

⁴⁸ E.J. McMahon and David G. Tuerck, "Taxes and Consequences: The Gotham STAMP 2006 Computable General Equilibrium Model," Empire Center for New York State Policy, (undated but elsewhere on site says December 29, 2005, for PDF format).

general equilibrium model that is constructed to take into account not only direct impacts (“static” in their terminology) on economic activity but also indirect effects, such as consequent impacts on tax revenues as a result of tax changes (e.g., an income tax cut generates more spending, so sales and income tax revenues rise). It also requires a balanced budget and therefore attempts to account for spending on private sector employment. This is a simulation model rather than a more standard econometric model based on historical data. Given the available material on both STAMP models, it is not possible to compare results of the two models. (However, it would be possible for the Beacon Hill Institute to produce comparative estimates.)

The 2006 model is reported to predict that phasing out the city’s 18.5 percent increase in property tax rates instituted in 2002 would eventually increase private sector employment by 26,400 jobs. However, these job gains would be offset by a net reduction of 10,700 public sector jobs as the City would have to reduce its spending. The net revenue loss associated with the phase-out could eventually approach \$1.6 billion, yielding (18.5 percent of 2005 property tax revenues of \$11.6 billion). This figure would be reduced somewhat by expanded tax collections as a result of the increased employment (income tax and sales tax revenues, feedback to the property tax system). A rough estimate of the cost per private sector job in terms of revenue loss is very high—\$62,000 annually.⁴⁹ The high cost per job is associated with an imputed low private employment elasticity of -.05.⁵⁰ (Note the similarity to the estimated coefficient for the marginal income tax rate in the 2001 model.)

In contrast to the relatively small negative effects on employment of increases in local taxes, the 2006 STAMP model shows relatively large stimulative effects associated with reductions in federal taxes. It is important to keep in mind that not only do federal taxes loom much larger in determining employment everywhere, but that the impact of the city’s taxes on employment is affected by changes in federal—and, to a lesser extent— state and local tax law.⁵¹

A methodological paper is appended to the non-technical presentation of results of the 2006 model.⁵² It reveals a few problems. Before this model can simulate the effect of a tax change on the economy, it must be calibrated using various elasticities. Most of these come from “the literature,” and some are simply assumed based on personal judgment, which is

⁴⁹ While the 2001 STAMP model provided results on revenue impacts, no such information has been provided for the 2006 model. Therefore, this author calculated the revenue impact and cost per job as follows: FY2005 property tax revenues were \$11.6 billion. This suggests a revenue loss of \$1.8 billion ($=\$11.6 \times .185/1.185$). Reducing this revenue loss by 10 percent to account for expansionary effects of the additional employment (as suggested by reported results of STAMP 2001) yields a net revenue loss of \$1.63 billion. Dividing by 26,400 jobs yields a cost per job of \$62,000.

⁵⁰ Elasticity= % ch jobs/% ch tax rate = $(26,400/2.9 \text{ million private employment})/.185 = .009/.185 = -.05$

⁵¹ Deductibility of property and income taxes blunts the impact of any increases in these taxes, at a given federal rate structure; but reductions in federal rates increase effective local tax burdens and, consequently, may adversely affect employment even if no change in the city’s property or income tax rates. The City together with the State can have some control over the impact of federal taxation by coupling or decoupling various state-local tax provisions.

⁵² David G. Tuerck, Jonathan Haughton, Alfonso Sanchez-Penalver, Vadym Slobodyanyuk, Sara Dinwoodie, “Methodology, The Gotham STAMP 2006 Computable General Equilibrium Model,” Empire Center for New York State Policy. (In the text of the methodology paper, the model is called “NYC CGE STAMP 2005.”) The methodology begins on p. 7 of E.J. McMahon and David G. Tuerck, *Ibid*.

also the basis of other assumptions. One troublesome example is the set of assumptions in the labor supply equation, in which personal judgment imposes a high sensitivity of low-income households to transfer payments and insensitivity to changes in taxes or the wage rate, while high-income households are assumed to be highly sensitive to changes in both taxes and wage rates. These elasticities ought to be based on empirical evidence. By assuming them, employment effects are to a great extent assumed. Unfortunately, the methodological paper does not provide any quantitative output; all a reader knows is that results are based on two runs of a complex model.⁵³

The 2006 STAMP model, while being used by the Manhattan Institute to report precise estimates of employment and tax effects of policy changes, is at best a mathematical exercise. An early survey of this type of model (and one of the documents cited in the methodological paper) notes that, “Although the spirit of ‘doing the best possible’ until better elasticity values arrive has much to commend it, the dilemma for modelers is how much confidence to have in such elasticity dependent estimates of impacts. This partly explains why modelers seem content to emphasize the broad themes of results rather than precise point estimates.” Because of weaknesses in this approach, the survey article emphasizes the need to employ sensitivity analysis to demonstrate how results would change under different sets of assumptions.

In addition to these New York City models, two other models, one of the Washington, D.C., metropolitan area,⁵⁴ and one of the Chicago metropolitan area,⁵⁵ are worth special consideration. Not only are they relatively recent studies, but they provide more useful comparisons, being centered on large cities with complex tax structures. Therese McGuire, cited earlier as a skeptic on the questions of whether “taxes matter,” is a co-author of both of these studies.

The D.C. study found statistically significant and large effects on annual employment growth for the sales tax and the personal property tax on business. (The sales tax would not have been significant if a 5% significance test had been employed.) For each of these taxes, an increase of one percentage point in either of these tax rates leads to more than a two percentage point decrease in the annual employment growth rate. The property tax rate and the corporate income tax rate were not found to be significant, a result that McGuire believes may be explained by their inability to control for school quality or school expenditures. There was some control for public services, as measured by non-AFDC expenditures, which are significantly and positively correlated with employment growth.

The Chicago area study, on the other hand, found that property taxes had significant and negative relationships with three annual growth measures: the market value of commercial

⁵³ The 2006 Gotham STAMP model includes “3,800 variables and almost a thousand lines of computer code, and every run of the model produces 920 pages of output.”

⁵⁴ Mark, *et. al.*, *op. cit.*

⁵⁵ Richard Dye, Therese J. McGuire, David Merriman, “The Impact of Property Taxes and Property Tax Classification on Business Activity in the Chicago Metropolitan Area,” *Journal of Regional Science*, Vol. 41, No. 4, November 2001, pp. 757-777.

property, the market value of industrial property, and annual employment growth. Of particular concern in this analysis was whether Cook County's classification system, which resulted in the effective tax rate being twice as high for commercial and industrial property than it was for residential property, was having a negative influence on Cook County (and Chicago) economic growth. This issue is certainly relevant for New York City, with its substantially higher effective property tax rates on non-residential property. This study gave relatively strong confirmation for the negative effects of property taxes and support for the finding that the Cook County classification system exerted a separate negative effect on the growth of commercial property. McGuire concludes from these two studies that tax differentials matter within metropolitan areas.⁵⁶ Given her general skepticism, the closing statement of the Chicago paper is a strong one: "Our findings provide support for policy changes that reduce the effects of classification on commercial and industrial property."

Help! Can we draw any conclusions from all this?

The wide range of results regarding the effect of taxes on economic growth is discouraging to those who wish to draw firm conclusions about the long-run impacts of any particular change in a state's or locality's tax policy. However, the general conclusion that taxes do matter to economic growth is hard to escape. Refinements to the data and methods used to estimate that relationship have resulted in an increasing number of studies that find taxes to have a statistically significant impact on growth.

Here are some key points on which economists generally agree:

- Increases in local taxes will cause a reduction in certain aspects of economic growth "other things held constant," such as public services and tax rates elsewhere. The size of the effect varies considerably depending on which tax rates increase, how economic activity is measured, what time period is covered, and what jurisdictions are included.
- Tax differentials within a metropolitan area will have larger economic impacts on a locality than tax differentials across regions. However, a high-tax region or state will lose jobs to states with which it competes if there are large differences in taxes.
- The estimated impact of taxes is larger when public services are included among the explanatory variables, but the findings on the role of public services are generally less robust than those on taxes. Moreover, some public services matter to economic growth more than others: some studies have shown that transportation matters more (highways, not subways, have been studied); education some; and welfare spending has a negative impact.⁵⁷ However, results even on these variables are not consistent across studies. The net effect of tax decreases that result in fewer public services may offset the positive effects on economic activity—or even lead to a reduction in activity, while the net effect of tax increases that finance improvements in selected services may be neutral or even positive.

To these conclusions can be added a number of qualifications:

⁵⁶ Therese J. McGuire, "Do Taxes Matter? Yes, No, Maybe So," *State Tax Notes*, June 9, 2003, pp. 885-890.

⁵⁷ Fisher, *op. cit.*

- Lowering taxes to increase the local rate of economic growth may be an expensive way to increase employment. The figures of revenue forgone to generate an additional job through a tax cut cover a wide range (even when earlier ones are adjusted for inflation). The figures from the STAMP models are of a different—and far larger—magnitude than other studies. The question is whether there are other economic development strategies that are more cost-effective. It is also important to keep in mind the point made by Haughwout, *et. al.*, that the revenue loss to the public sector translates into a revenue gain for the private sector (which, according to their revenue hill analysis, is valued dollar for dollar more than the public services the city provides).
- There is continuing debate on the effectiveness of tax incentives targeted to particular areas (enterprise zones) or (as has been the style in New York City) to particular firms. Some economists argue that competition in the form of discretionary incentives is a zero-sum game from a national perspective and can in fact result in a net decrease in overall well-being if it results in important government services being curtailed. Bartik has argued to the contrary, that tax competition is most prevalent in areas with high unemployment, and that increasing employment in those areas produces a net benefit to the nation.⁵⁸ He has argued more recently, however, that an incentives to an individual firm is “the type of incentive that looks most like legalized bribery of the rich.”⁵⁹ While some economists make the general argument that tax competition leads to efficiency in the provision of government services, this judgment would appear better suited to broad-based tax reductions rather than to selective ones.
- To the extent that lowering taxes increases employment, new jobs may be going to in-migrants rather than to existing residents. Some even argue that virtually all net new jobs in a local economy are held by in-migrants.⁶⁰
- Employment growth itself may well generate a need/demand for more public services, thus requiring additional government spending.
- While models attempt to estimate the “pure” effect of a change in taxes on economic activity, seldom does the economy work this way. When one locality is changing tax rates, so may others. When taxes are cut, public services may well have to be reduced.
- Most of the empirical research on the relationship between taxes and economic growth has generalized across states or metropolitan areas. Thus, one could question drawing quantitative conclusions about the New York City economy, which has a more complex tax structure and an industrial/service mix that differs significantly from other places. Nevertheless, this review of the literature does provide some important messages for New York City.

⁵⁸ Bartik, 1991, *op. cit.*

⁵⁹ Timothy J. Bartik, “Solving the Problems of Economic Development Incentives,” *Growth and Change*, Vol. 36, No. 2, Spring 2005, pp. 139-166.

⁶⁰ Timothy Bartik, “Who Benefits from Local Job Growth: Migrants or the Original Residents?” *Regional Studies*, vol. 27, 1993, pp. 297-310 (check page numbers against journal); Oliver Blanchard and Lawrence Katz, “Regional Evolutions,” *Brookings Papers on Economic Activity*, vol. 1, 1992, pp 1-75.

What Can We Say About New York?

Extracting policy guidance from econometric research is often a difficult and frustrating task. This is clearly so in the case of the effects of tax changes on local economic growth. There is neither consensus on the degree to which tax reductions (and which tax reductions) can spur economic growth, nor a substantial body of research that addresses the New York City case directly. Nevertheless, the weight of evidence from so many studies can provide guidance.

Before turning to policy, one important difference about New York City's economic structure is worth noting. While studies have shown non-manufacturing (services) to be less sensitive to tax differentials than manufacturing, most of the studies don't distinguish among services that are local in orientation and those that have broader regional, national, and international markets. New York City's services sectors, with its relatively large representation of professional business services (finance, law, accounting) is far less local in orientation than the rest of the country, and even other major cities. This would render firms more sensitive to local costs, but these same firms may not be so tax sensitive because the specific benefits from a New York City location outweigh higher costs. CBC's earlier research on the location decisions of professional business services and of the media and communications sector found that taxes were generally not high on the list of concerns.⁶¹ This is not to say that taxes do not matter for such firms, but rather that the benefits of the city's labor market, international access, and professional support chains reduce the impact of high taxes or an increase in taxes. (This takes us back to the Mayor's point that New York City is worth the cost.)

What are the implications of empirical research for New York City policymaking? CBC has consistently taken the position that high taxes are bad for New York City's competitive position, and it would be hard to find someone willing to argue that this is the price of better public services.⁶² This review of the literature provides impartial, academic research supporting this point of view, but cautions that tax cuts accompanied by service cuts may not be a positive stimulus. This proviso, nevertheless, does not negate the point that taxes can be lowered without affecting public services if the city can capture productivity gains.⁶³

The evidence suggests that New Yorkers who are concerned about the long-run economic effects of New York City's high tax burden have reason to be so. Even experts such as Michael Wasylenko, who are skeptical that taxes are an important determinant of economic

⁶¹ "Professional Business Services in the New York City Economy," Citizens Budget Commission, July 1995, "Media and Communications in New York City," Citizens Budget Commission, December 1998.

⁶² CBC's 2001 competitiveness score card found the New York metropolitan area to rank fifth in highway congestion, the only measure of public investment in the study, among 13 metropolitan areas that are likely competitors for business ("New York's Competitiveness: A Scorecard for 13 Metropolitan Areas," Citizens Budget Commission, July 2001). Highways are one of the public investments that have shown up as important in the literature.

⁶³ Citizens Budget Commission, "New York City Could Save More Than \$1Billion Annually Through Five Productivity Improvements," Press Release, December 4, 2002. These proposals, each of which is supported by an individual CBC report, are 1) a 40-hour work week for civilian employees, 2) restructuring special education, 3) more rational staffing of the police department, 4) streamlined procurement, and 5) energy conservation at municipal agencies. (The first item would lower costs but is not technically a productivity improvement; it is a decline in the real wage.)

growth differentials among states or regions, believe that they are important locally, especially when a locality's tax burden is far out of line with its neighbors'. The message from these findings is that New York should be especially concerned with competition from New Jersey and Connecticut, and somewhat less concerned with its tax disparities with Atlanta and Houston. Even so, because New York is an "outlier" in its combined state and local tax burden, tax disparities with other regions should not be shrugged off.

The economics literature can also shed some light on the competing claims of local officials and commentators about the impacts of the City's tax increases. Arguments that tax increases have no impact on the economy can be dismissed based on the accumulated evidence, although the extent of their importance remains uncertain.

CBC also supports broad-based tax reform rather than the use of *ad hoc* discretionary tax incentives.⁶⁴ Not only is there evidence that such incentives are at best poorly targeted, unnecessarily transferring resources from the public to the private sector; but they also create an uneven playing field among the city's businesses and inequities across taxpayers. Wasylenko's reading of the literature is that the most productive form of tax competition is to implement across-the-board tax reform, noting that "a sound fiscal policy obviates many of the tax perks that businesses seek."⁶⁵

While economists' understanding of the effect of taxes on economic growth is imperfect, their knowledge about the impact of public services is even more so. It is hard to evaluate which effect will be larger—a reduction in taxes or a reduction in public services—and therefore which alternative is more harmful. On the other hand, there is reasonable evidence that redistributive expenditures retard growth, and Haughwout, *et. al.*, found that New Yorkers do not receive an additional dollar of services for an additional dollar of taxes. This is not surprising in that New York City's mandated expenditures on Medicaid and TANF drive up local taxes and create a wedge of non-competitiveness.

To compensate for this tax wedge, New York City must be ever more diligent in promoting agglomeration benefits (from the clustering of economic activity) through non-tax policies and providing public services efficiently. New York State has taken over a bigger share of Medicaid in past years, but the local cost has continued to rise as hospital and other medical costs rise and as the Medicaid caseload grows.⁶⁶ There is ample opportunity to lower Medicaid costs through programmatic reforms and reductions in fraud.⁶⁷ A further shift of financial responsibility toward the State will motivate that level of government to address these high costs at the same time that it rationalizes the assignment of governmental

⁶⁴ Testimony of Marcia Van Wagner before the New York City Council Committee on Economic Development, June 11, 2002.

⁶⁵ Wasylenko, *op. cit.*, p. 49.

⁶⁶ The average monthly Medicaid caseload for New York City has grown from 1,217,397 in 2000 to 2,312,678 in the third quarter of 2005. Total Medicaid spending on New York City residents rose from \$15 billion in 2000 to \$22 billion in 2004.

<http://www.health.state.ny.us/nysdoh/medstat/quarterly/ssd/quarterly.htm>

⁶⁷ "Why New York's Medicaid Program is the Most Expensive in the Nation and What to Do About It," Citizens Budget Commission, April 2006.

responsibilities.⁶⁸ That the next Albany administration will provide needed Medicaid reform and more fiscal relief for New York City are optimistic prospects.

The Mayor's assertion that New York is a "luxury product" for which businesses should be willing to pay more⁶⁹ does not negate the fact that a more competitive tax structure would make the city an even more attractive place for households and businesses.

Looking Ahead

Where might researchers put future efforts that could be of value to the City's policymakers?

It would be possible to improve upon the Haughwout, et al. or Manhattan Institute models as suggested earlier. The most challenging part of doing so would be to find appropriate public service measures for each jurisdiction included in the model, or for changes in the level of public services. A promising approach could be the development of a model for the New York City region (along the lines of the one developed for the D.C. metropolitan area) that takes into account both tax differentials across local jurisdictions and, to the extent possible, differences in public services, in particular education.

Studies of New York City have looked at sales, income, and property taxes. The property tax has been treated as a uniform tax; however, effective rates vary significantly by class, and differences between Class I and categories of business property have only been aggravated since the passage of S7000A in 1983.⁷⁰ The research on the Chicago metropolitan area indicates that such classification has an adverse effect on employment growth. While much of what supports the current property tax structure is a political equation, credible quantification of its costs would reduce the influence of politics. Similarly, research on other business taxes that could either directly or indirectly shed light on New York City would be particularly helpful.

Finally, more work needs to be done on tax structure as well as tax rates. Can the same revenue goal be reached if tax bases, allocation rules, and the like, were defined differently? The goal is not merely an efficient tax structure, one that has the least adverse impact on employment (if this is indeed the driving economic development imperative), but also one in which equity considerations and stability of revenue streams are also addressed.⁷¹ Even without additional research, there is plenty of room for property tax reform, in particular, reducing differentials across property classes.⁷²

⁶⁸ A generally agreed upon principle of sound public finance is that income redistribution should be financed at a high level of government, ideally at the federal level. Differences in local or regional levels of assistance may drive out taxpayers from areas with generous policies and may motivate migration of poor households and individuals to these more generous areas. Both of these responses would drive up per capita tax burdens in generous areas.

⁶⁹ Diane Cardwell, "Mayor Says New York is Worth the Cost," *op. cit.*

⁷⁰ New York City Independent Budget Office, "Twenty-Five Years After S7000A: How Property Tax Burdens Have Shifted in New York City," December 5, 2006.

⁷¹ For example, the income tax, favored because of equity, is a relatively unstable revenue stream.

⁷² New York City Independent Budget Office, *op. cit.*