
# Economic and Fiscal Effects of Eliminating the Los Angeles Business Tax

*Prepared for*

The City of Los Angeles Office of Economic Analysis

*Prepared by*

*The Blue Sky Consulting Group*

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# EXECUTIVE SUMMARY

For many years, the City of Los Angeles business tax has been a topic of discussion among business people and elected officials alike. The business tax has been the focus of previous reform efforts as well as the subject of previous studies. Nevertheless, these reform efforts have not reduced the level of interest on the part of stakeholders in modifying the business tax. In 2011, the Business Tax Advisory Committee (BTAC) recommended to the city council that the business tax be eliminated.

The recommendation of the BTAC was based in part on research conducted by USC Professor Charles Swenson indicating that elimination of the business tax would result in sufficient additional economic activity such that growth in other, non-business tax revenue sources would likely more than offset the loss of business tax revenues. In response to the BTAC recommendation and the previous research, the city's Office of Economic Analysis issued a request for bids for an analysis of the fiscal and economic effects of the proposed business tax elimination. The Blue Sky Consulting Group was selected from among the qualified bidders that responded to this request, and this report presents the results of our analysis.

Because of the importance of this issue, both to the city's budget and to the business community, we sought to analyze the proposed elimination of the business tax by employing multiple analytical approaches. To that end, we present two distinct analyses of the likely impact of eliminating the business tax. First, we apply the findings from the best available published research on the effects of local business tax cuts to the unique situation in Los Angeles. Second, we model the effects of eliminating the business tax using the REMI model. REMI is a well-regarded economic modeling tool for estimating the effects of tax or policy changes on a region's economy, and is widely used by other jurisdictions for similar purposes.

We also compare the results from our analysis to those of a previous analysis commissioned by the BTAC (the Swenson report), examine the potential secondary economic effects of eliminating or reducing the business tax, and consider several alternatives to the BTAC proposal suggested by the City Administrative Officer (CAO) and the Chief Legislative Analyst (CLA).

## Economic Analysis of Business Taxes

Fundamentally, the issues at stake relate to whether and to what extent reductions in local taxes result in increased economic activity (i.e., new jobs or expanded output). Our conclusion, based on an extensive review of the economic literature published over the past several decades as well as our own experience, empirical research and analysis, is that local taxes do influence the level of economic activity in a region. Although many studies have failed to find a measurable connection between local taxes and output, the majority of the published research shows that lower taxes can result in higher levels of economic growth (or, conversely, that higher taxes lower growth rates). This result is confirmed by our own economic modeling of the impact of eliminating the Los Angeles business tax.

Nevertheless, there are good reasons why researchers sometimes fail to find a connection between the level of taxes and economic output. First, taxes are a relatively minor part of

business costs. In addition, the impact of a local tax cut may be mitigated by offsetting factors such as increases in federal taxes (when businesses lose the deduction associated with their local tax bill) or increases in commercial rent or real estate costs (as a result of increased competition due to the tax cut). The impact of a tax reduction on business location decisions may also be diminished to the extent that neighboring or competing jurisdictions also reduce taxes.

The extent to which a local economy responds to a tax cut may also depend on the characteristics of the affected businesses. For example, personal service providers such as dry cleaners or hair salons that serve a local market (in which all similar firms face the same tax rates) are less likely to move outside city boundaries in order to avoid taxes, whereas manufacturing firms that serve a national market may be much more sensitive to tax rates. As a result, the industry mix within a local community can have an influence on the extent to which local tax reductions have an effect.

Finally, just like individuals, businesses rely on government services. To the extent that reductions in business taxes result in a reduction in the level of government services, the overall impact of a tax cut may actually reduce business activity in the affected jurisdiction if businesses choose to locate in a jurisdiction with a higher level of public services.

As a result of these complex economic factors, measuring the impact of tax changes presents a challenging analytical task for economists. The difficulty in assessing the impact of a tax reduction lies in determining what factors, whether influenced by the tax cut or other external factors, affect business location and expansion decisions. For example, if a local tax cut occurs at the same time that energy costs are decreasing (due to external factors such as the level of global demand for energy), then it can be very challenging for economists to sort out what portion of the increase in output resulted from the lower taxes and what portion from the lower energy costs.

In spite of these challenges, many studies have been published over the past several decades examining the impact of taxes on economic activity. According to the most recent published meta-analysis (i.e., a review and synthesis of the published research), a 10 percent reduction in state and local business taxes would lead to a 2 percent increase in economic activity.[1]

## Our Analysis of the Los Angeles Economy

In order to estimate the impact of eliminating the business tax, we employed two distinct analytical approaches. First, we applied the findings of the published research to the unique circumstances of Los Angeles. Next, we modeled the impact using the REMI model. The results of each of these approaches indicate that eliminating the business tax will increase the level of economic output and employment in Los Angeles.

We estimate that eliminating the business tax would result in a reduction in the overall state and local tax burden for Los Angeles businesses of about 4.8 percent. By applying the

[1] Wasylenko, Michael , "Taxation and Economic Development: The State of the Economic Literature," *New England Economic Review* (March/April 1997): 37–52. Wasylenko reported an average elasticity of -.2 among the studies he reviewed.

findings from the published economic research (indicating that a 10 percent reduction in taxes leads to a 2 percent increase in economic activity), we estimate that eliminating the business tax would result in an increase in economic activity in the City of Los Angeles of 0.96 percent, or about $2 billion annually.[2]

Modeling the impact of the elimination of the business tax using the REMI model yields roughly similar results. According to our REMI analysis, eliminating the business tax would result in an increase in economic output of about $996 million, or about 0.47 percent. In addition to projecting output responses, the REMI model also projects employment changes. According to the REMI analysis, eliminating the business tax would result in an increase in employment in the City of Los Angeles of approximately 7,640 jobs.

In order to translate these output changes into fiscal impacts for the city's budget, we performed a regression analysis. Regression analysis is a widely used technique among economists, which is used to estimate the relationship between two or more factors of interest (e.g., taxes and economic output). This analysis indicates that, for each $1,000 increase in output, the city's general fund revenues (excluding the business tax) increase by about $13.33.[3]

Applying this estimate to our output increase figures, we find that eliminating the business tax would result in an increase in other general fund revenues of between $13.3 million and $27.1 million. However, because of the loss of business tax revenues, these increases in output and revenues would not be sufficient to offset the cost of eliminating the business tax. Using the larger of the two output increase estimates, we estimate that the overall net fiscal impact of eliminating the business tax would be an annual net revenue loss of nearly $400 million.

## How Our Results Compare to Previous Analysis

Our work follows a previous report prepared for the BTAC by Charles Swenson.[4] Professor Swenson's report concludes that elimination of the city's business tax would likely generate sufficient additional economic activity such that the increase in other city revenue sources, such as sales and property taxes, would more than offset the loss of business tax revenue. In contrast, we find that, while the elimination of the business tax would increase economic activity, the resulting increase in revenues would not be sufficient to offset the revenue loss from elimination of the business tax.

The differences in our respective results stem primarily from differences in our respective estimates of the likely economic response to the elimination of the business tax. While our results are based on the body of published academic research and confirmed by application of the REMI model, Professor Swenson's results are not supported by the body of published research on the impact of business tax cuts. Indeed, his estimate of the likely response of area businesses to the elimination of the business tax is more than 25 times larger than the average

[2] Economic activity is estimated as reported gross receipts, which forms the basis for our fiscal impact results presented subsequently.
[3] In addition to the business tax revenues, our regression excluded revenue from interest, grants, municipal fines, transfers, and the "all other" category.
[4] Swenson, Charles, "Report to the City of Los Angeles on Potential Revisions to the Business Tax." August 3, 2011.

of the published research studies. Not only are Professor Swenson's conclusions well outside of the likely range of outcomes as reported in the research literature, but they are based entirely on economic changes occurring in Los Angeles in a single year, 2001, and do not adequately account for economic changes occurring both outside of Los Angeles as well as during other time periods.

Specifically, Professor Swenson's estimate is based largely on a comparison of small businesses in Los Angeles (those with less than $500,000 in revenues) to small business located elsewhere in California in 2001. In essence, he compares the rate of growth for LA businesses to non-LA businesses and assumes that the difference in growth rates is due to the tax cut enacted that year. However, this assumption fails to take account of economic factors in addition to the business tax cut that might explain this difference, such as the dot-com bust and recession that began in 2001 and led to significant job losses in Northern California while largely sparing Los Angeles (at least during 2001).

Additionally, Professor Swenson's methodology is very sensitive to the data source, measure of economic activity, and tax period analyzed. Rather than relying on all of the available information, his reported results rely on just a portion of the available data. Incorporating other data sources, measures, or time periods would lead to a different conclusion.

Therefore, we find that Professor Swenson's methodology does not provide a reliable means of estimating the likely impact of the elimination of the business tax.

## Conclusion

Our conclusion, supported by the body of published academic research and our own economic modeling, is that eliminating the business tax would result in an increase in employment and economic output in the City of Los Angeles. However, this increase in economic output would not be large enough to generate sufficient additional revenues for the city to offset the loss of business tax revenues. Instead, elimination of the business tax would lead to a net reduction in revenues of nearly $400 million annually.

# INTRODUCTION

In 2011, the Business Tax Advisory Committee (BTAC) recommended to the Los Angeles City Council that the city's business tax be eliminated. This report presents the results of our analysis of the changes to the business tax proposed by the BTAC.

Because of the importance of this issue, both to the city's budget and to the business community, we sought to analyze the issue by employing multiple analytical approaches. To that end, we present two distinct analyses of the likely impact of eliminating the business tax. First, we apply the findings from the best available academic research on the effects of local business tax cuts to the unique situation in Los Angeles. Second, we model the effects of eliminating the business tax using the REMI model. REMI is a well-regarded economic modeling tool for estimating the effects of tax or policy changes on a region's economy, and is widely used by other jurisdictions for similar purposes. Applying the results from both of these methods, we estimate the likely increase in non-business tax revenues that would result from the estimated increase in economic activity stemming from the tax reduction.

We also compare the results from our analysis to those of a previous analysis commissioned by the BTAC (the Swenson report), examine the potential secondary economic effects of eliminating or reducing the business tax, and consider several alternatives to the BTAC proposal.

# HOW DO TAX CUTS AFFECT ECONOMIC ACTIVITY?

Most economists agree that reductions in state or local taxes spur economic activity. Reducing taxes, just like lowering any business cost, is likely to result in an increase in economic output, holding other factors that affect output constant. Existing businesses in a region will become more competitive relative to their competitors in neighboring jurisdictions, new businesses will be more likely to start and succeed, existing businesses will be less likely to leave the region in search of lower taxation, and businesses from outside of the region will be more likely to move into the region once the taxes are lowered, holding other factors constant. As a result, jurisdictions that lower taxes without changing other factors that influence business growth are likely to see an increase in economic activity (i.e., number of jobs or output).

Although most economists subscribe to this view, there is a notable minority that makes a counter argument (i.e., that changes in state and local taxes do not have much of an impact on local economic activity).[5] These economists point out that taxes are a relatively minor part of business costs, with many factors playing a more important role. In addition, state and local taxes are deductible for purposes of calculating a firm's federal income tax bill, so a potion of the impact of any state or local tax reduction is offset by an increase in federal taxes. Furthermore, to the extent lower taxes result in an increase in regional competitiveness and business activity, some portion of the tax cut will be offset by higher business costs for scarce or limited resources, such as labor or land (e.g., wage rates or commercial rents could potentially increase as a result of increased demand stemming from a tax cut).

[5] Bartik, Timothy, "Michigan's Business Taxes and Economic Development: Possible Reforms." W.E. Upjohn Institute, 2006.

The extent to which a local economy responds to a tax cut may also depend on the characteristics of the affected businesses. For example, personal service providers such as dry cleaners or hair salons that serve a local market (in which all similar firms face the same tax rates) are less likely to move outside city boundaries in order to avoid taxes, whereas manufacturing firms that serve a national market may be much more sensitive to tax rates. As a result, the industry mix within a local community has an influence on the impact of local tax reductions.

The time horizon over which decisions are made can also influence the business response to a tax change. For many businesses, a location or expansion decision is made with the intention of remaining in the new or newly expanded facility for many years. To the extent that affected firms believe that the tax reduction may be temporary, the effects on business decisions will be diminished. Similarly, the effects of a tax reduction may only be temporary to the extent that neighboring jurisdictions also reduce taxes in response.

Finally, just like individuals, businesses rely on government services. To the extent that reductions in business taxes result in a reduction in the level of government services, the overall impact of a tax cut may actually reduce business activity in the affected jurisdiction. For example, if a tax cut is paid for with reduced levels of police or fire protection or a reduction in infrastructure investment, businesses may rationally choose to locate in an alternative jurisdiction with higher levels of public services.

All of this is not to say that businesses do not respond to tax cuts (indeed, research suggests that they do, as demonstrated in the next section). However, at least some economists have found that the effects are negligible, and make compelling arguments in support of their position.

## What Previous Research Says

The effect of taxes on business activity is an area of widespread interest among researchers, and multiple studies on this topic have been conducted over the past several decades. But, perhaps not surprisingly given the multitude of factors affecting business performance and location decisions, and the difficulty of empirically isolating the impact of taxes in this context, the findings from individual studies vary greatly depending on the geographic focus, data, and methodology used by the investigator.

The difficulty in assessing the impact of a tax reduction lies in determining what factors, whether influenced by the tax cut or exogenous circumstances, affect business location and expansion decisions. These decisions are complex, and rely on the assessment by individual businesses of a host of factors, only one of which is tax rates. Furthermore, different types of businesses respond differently to taxes, so assessing the factors that influence business location decisions across industries and types of businesses can present a challenge for researchers.

In addition, it can be difficult for economists to sort out whether business growth is in fact caused by a tax cut, or by some other, unmeasured external factor. For example, if a local tax cut occurs at the same time that energy costs are decreasing (due to external factors such as the level of global demand for energy), then it can be very challenging for economists to

sort out what portion of the increase in output resulted from the lower taxes and what portion from the lower energy costs. Similarly, when economists compare one region to another, they typically make an effort to measure what they consider meaningful differences between studied regions, assuming that the remaining observed differences in output are due to the tax effect they are evaluating. However, if some underlying, unmeasured factor explains the difference (or part of it) instead, this will cause researchers to overstate the true effect of the taxes. For example, if two regions are compared and one has higher taxes and higher utility costs, but only tax rates are measured. Researchers might incorrectly conclude that the taxes caused lower growth when, in fact, part of the slower growth is explained by higher utility costs. Because of the complexity of local economies, measuring the impact of tax cuts (or increases) presents a challenging analytical task for economists.

Many of the studies that do seek to measure the impact of taxes on business activity present (or allow reviewers to calculate) an "elasticity" of economic changes stemming from a given tax change. The concept of elasticity is widely used in economics, and simply measures the percent change in one factor or variable of interest (e.g., economic output) with respect to another factor or variable (e.g., tax rates). So, for example, if the elasticity of economic output with respect to state and local taxes is -0.2, this means that a 10 percent reduction in taxes would produce a 2 percent increase in economic output.

Most studies on interregional tax elasticity find that the effect of taxes on business activity is real, but relatively small.[6] Timothy Bartik of the W.E. Upjohn Institute conducted a meta-analysis of such studies, which aggregated findings in the literature from 57 distinct studies.[7] Of the studies reviewed, 70 percent found a statistically significant negative relationship between business activity and taxes (i.e., lower taxes are associated with higher business activity). The median for all studies reviewed for which an elasticity was presented or could be calculated was -0.25, meaning that a 10 percent decrease in total state and local taxes would increase business activity by 2.5 percent. Dr. Bartik concludes that "it seems reasonable to assume that the elasticity of state or metropolitan area business activity with respect to state and local taxes is somewhere in the range from -0.15 to -0.85."[8]

Another, more recent meta-analysis, by Syracuse University's Michael Wasylenko, built upon the literature review conducted by Dr. Bartik. Among 34 studies that calculated the effect of business taxes on economic output, the average elasticity calculated by Wasylenko was between 0 and -0.26.[9] Wasylenko concludes that "this review of the literature suggests that

[6] Interregional studies measure the effect of taxes on economic activity across different regions. Intraregional analyses (discussed later in this report) measure the effects of tax reductions among communities within the same region.

[7] Timothy J. Bartik, "The Effects of State and Local Taxes on Economic Development: A Review of Recent Research," *Economic Development Quarterly* 6, no. 1 (1992): 102–110.

[8] Bartik (1992), op. cit., pp. 105-106. Note that a substantial fraction of the studies included by Bartik focused on the impact of taxes on the manufacturing sector. Bartik notes that manufacturing firms specifically and capital intensive firms generally are more sensitive to changes in taxes. Therefore, the results reported by Bartik may overstate the economy-wide effect of an across the board tax reduction.

[9] Michael Wasylenko, "Taxation and Economic Development: The State of the Economic Literature," *New England Economic Review* (March/April 1997): 37–52.

taxes have a small, statistically significant effect on interregional location behavior. The suggested estimate of the interregional elasticity is -0.2."[10]

Most of the studies evaluated by Bartik and Wasylenk looked at the interregional elasticity of economic output with respect to taxes. A much more limited range of studies on *intraregional* effects can also provide some insights for Los Angeles. Intraregional results might be expected to differ from interregional findings because taxes may matter more when firms are making choices between neighboring municipalities in the same region that have highly similar non-tax costs or other characteristics. For example, a business choosing among neighboring suburbs would have access to a similar labor force, transportation network, and regional market. In this context, differing local tax rates may play a larger role than would be the case for interregional location decisions. And, in fact, when studies measure the impact of taxes in a metropolitan area without specifying differences between suburbs and the central city, the tax elasticity estimates are higher, meaning that the same percentage tax change generates a relatively larger change in economic output.[11] According to the Wasylenko meta-analysis, "Intra-regional studies produce tax elasticities that are quadruple or more those found in the interregional studies. With other cost and market variables very similar among different locations within a region, fiscal differences within the region play a more significant role in location choice."

On the other hand, studies that focus specifically on taxes and central city business activity have not found such a significant impact. Of the four studies reviewed by Dr. Bartik that focused on central city tax effects, three studies found no significant results while the fourth found evidence that there was an effect (although the elasticity could not be estimated).

The more ambiguous findings with respect to central city tax changes can be explained, at least in part, by the importance of non-tax factors, such as improved regional accessibility, ability to interact with people in other firms, and prestige.[12] These factors may provide central cities with advantages over their suburban neighbors, helping to mitigate the effect of tax rate differences. In addition, the larger size of central cities means that businesses that compete in local markets have a more limited ability to move to a lower tax jurisdiction than would a comparable business located in a smaller, surrounding suburban jurisdiction. Bartik implicitly acknowledges these factors, concluding his review of the literature on central city effects noting, "it is certainly quite plausible that central city locations in general may not be good substitutes for suburban locations."[13] He goes on to write, "if that is the case, then shifts in the relative tax rates of central city versus suburban locations would not be expected to lead to much redistribution of economic activity within the metropolitan area."

In sum, the published economic research reports a wide range of findings with respect to the impact of tax reductions on business activity. Fully 30 percent of reviewed studies did not find

[10] ibid, p. 49.
[11] Timothy J. Bartik, "Solving the Problems of Economic Development Incentives," *Growth and Change* 36, no. 2 (Spring 2005): 139–166.
[12] Brian Klinksiek, "Business Taxes in San Francisco: A Review of How Taxes Affect Business-Location Decisions" (San Francisco Planning and Research Association, February 2004).
[13] Bartik (1992), op.cit., p. 108. Here, "substitutes" refers to alternatives in the economic sense, meaning that businesses may not consider one jurisdiction a comparable or equally good alternative.

that there was a relationship, while others (looking at intra-suburban competition) found quite large effects. Ultimately, the best available research on the elasticity of business activity with respect to overall tax changes seems to show an elasticity of -0.2, the average result reported in the most recent meta-analysis. In other words, this research indicates that a 10 percent reduction in state and local taxes, for example, would result in an increase in employment or output of about 2 percent.

## OUR ANALYSIS OF THE LOS ANGELES ECONOMY

In order to determine what the impact would be on the City of Los Angeles of eliminating (or otherwise modifying) the city's business tax, we conducted our own empirical analysis (i.e., an analysis of Los Angeles specific data). This analysis examined both the likely change in economic activity that would result from the proposed modifications to the city's business tax, as well as the likely net fiscal impact of the proposed changes.

Because of both the importance of the issue and its empirical complexity, we employed a multipronged approach to assessing the likely impact of the proposed business tax changes, relying on two distinct analytical approaches to the problem. First, we apply the findings from the best available published research on the effects of local business tax cuts to the unique situation in Los Angeles. Second, we model the effects of eliminating the business tax using the REMI model. REMI is a well-regarded economic modeling tool for estimating the effects of tax or policy changes on a region's economy, and is widely used by other jurisdictions for similar purposes. Each methodology has its own strengths, and the conclusions we can draw from the results of these approaches taken together are stronger than the conclusions we would be able to draw from employing one of these in isolation. The two approaches we employed and the results of each are presented below.[14] First, however, we examine the relationship between the level of economic output in Los Angeles and the amount of revenue that the city collects, in order to assess the likely fiscal impact of any economic changes stemming from changes to the business tax.

### Translating Economic Changes into Revenue Changes

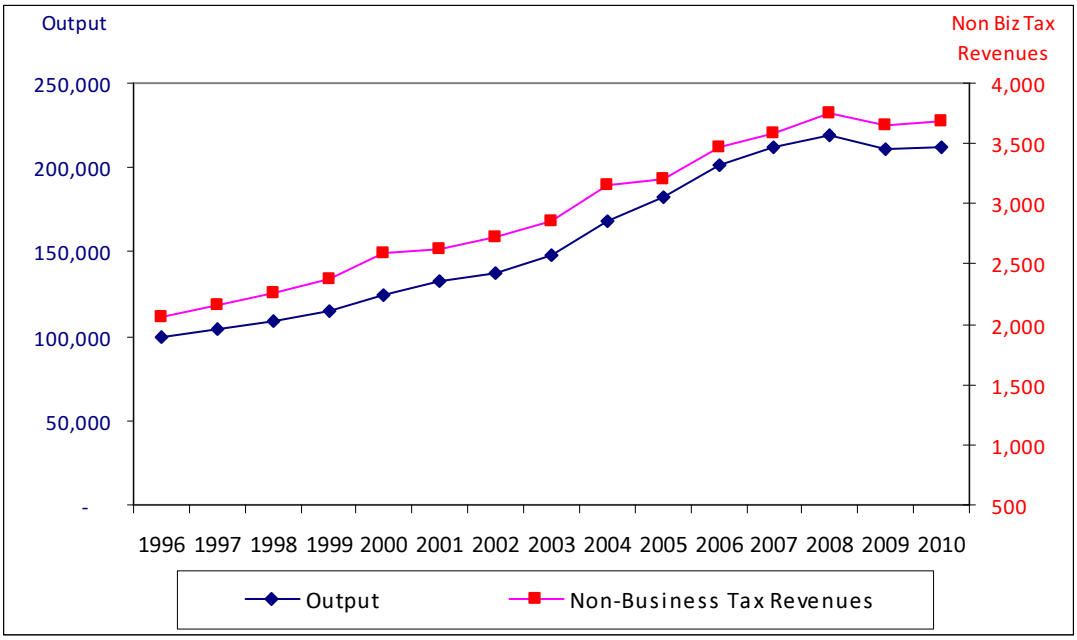
Before exploring the potential changes in economic activity that would result from a change in the business tax, we present our methodology for estimating the likely change in city revenues that would result from an economic change.

To estimate how economic changes would translate into revenue changes, we employed a regression methodology. Regression analysis examines how two (or more) variables are related. In this case, we sought to measure the relationship between the overall level of economic activity in Los Angeles and the amount of revenues collected by the City.

[14] Here it is important to note that each of these analyses holds city spending constant. In other words, each assumes that, to the extent city revenues drop as a result of the elimination of the business tax, these revenues would be replaced by alternative revenue sources that either stem directly from the increase in economic activity or do not directly affect local businesses (i.e. taxes paid by residents). To the extent that the level of public services is not held constant, these estimates would likely overstate the true impact on the economy, as the location decisions of some businesses would be affected by the lower level of public services.

As shown in Figure 1, historically, the overall level of city revenues (excluding the business tax) has tracked very closely with the level of economic output (reported amount of gross receipts) in the city. Using a regression model of total non-business tax revenues as a function of gross receipts, we can estimate how non-business tax revenues change when underlying economic changes occur.

**Figure 1: Los Angeles Non-Business Tax Revenues and Economic Output**




Source: Blue Sky Consulting Group Analysis of City of Los Angeles Data. Amounts in millions. Output measured as gross receipts reported to the city.

Specifically, we estimated a simple two-variable regression model of the city's general fund revenue sources excluding business tax revenues and other revenue sources not influenced by business activity ("non business taxes") as a function of economic output (measured as gross receipts or "GR").[15] The following equation presents the results of our regression model (standard errors are presented in parentheses,):

Non business taxes = 828.84 + 0.01333*GR
(59.74) (0.000364)

The results of our regression analysis indicate that our model is a good tool for estimating the likely change in revenues that would result from an increase in gross receipts. The r-squared value, which measures the extent of variation in the data that is explained by the regression

[15] "Non business taxes" include Property Tax, Licenses Permits Fees & Fines, Utility Users' Tax, Sales Tax, Power Revenue Transfer, Transient Occupancy Tax, Documentary Transfer Tax, Parking Users' Tax, Franchise Income, and State VLF. Each of these revenue sources was believed to be reasonably related to the level of economic activity in Los Angeles. Excluded general fund revenue sources (not believed to be related to economic activity) include Municipal Court Fines, Interest, Grant Receipts, Reserve Fund Transfers and "all other." These revenue sources not connected to the level of economic activity account for approximately 4 percent of general fund revenues.

model, is.99 (with a maximum value of 1.00). The standard errors (shown under the estimated values in parentheses) indicate that the results are highly statistically significant.[16]

According to our regression analysis, each additional dollar of gross receipts is associated with an increase in non-business tax revenues of $0.01333 (the coefficient on GR in our regression model). Stated differently, each additional $1,000 in gross receipts (total output) results in an increase in non-business tax revenues for the city of approximately $13.33.

## Application of Published Research to the Case of Los Angeles

As the starting point for our analysis of the likely economic effects of eliminating (or otherwise modifying) the business tax, we estimated the likely economic response of businesses to a reduction in the business tax using the results obtained from economic research conducted over the past four decades. As discussed in the literature review section of this report (above), several dozen studies have been conducted since the 1970s on the likely economic impact of business tax cuts at the regional level. Specifically, these studies have examined the economic impact from a tax change in terms of the percent change in employment, output, or other broad-based measures of economic activity. Together with information on the percent reduction in state and local business taxes that brought about the observed change, the studies calculate (or allow researchers to calculate) the elasticity of economic output with respect to a change in taxes.

Two notable meta-analyses have been published that systematically summarize the findings from the research, and we apply the average elasticity reported from the most recent of these two studies. According to this research, the average elasticity of economic output with respect to a change in state and local taxes is -0.2. Stated differently, lowering state and local business taxes by, for example, 10 percent is likely to lead to a 2 percent increase in economic activity.[17]

Applying this same figure to the Los Angeles economy and level of business taxes, we can estimate the likely change in output in the City of Los Angeles that would result from eliminating the city's business tax (or making other modifications to the tax).

First, we estimated the change in the overall state and local tax burden that elimination of the Los Angeles business tax would produce. According to data complied by Ernst & Young for fiscal year 2010 (the most recent year available), overall state and local business taxes in California totaled $85.4 billion.[18] We estimate that Los Angeles businesses paid approximately $8.85 billion of these taxes, or 10.36 percent of the total, based on the city's share of statewide employment. During the same period, revenues from the City of Los Angeles business tax totaled $424.8 million, according to city tax data. Therefore, the Los Angeles business tax constituted 4.8 percent of the total state and local business tax burden for Los Angeles firms ($424.8 million/$8.85 billion); consequently, eliminating the tax would

[16] We note that a more sophisticated regression model would account for factors, other than gross receipts, that influence the level of city revenues. However, for simplicity (and consistency with the approach followed by Professor Swenson) we report just the simple model results here.
[17] See our discussion of the published research literature presented previously in this report.
[18] Ernst & Young, "Total state and local business taxes: State-by-state estimates for fiscal year 2010."

lead to a reduction in total state and local taxes paid by businesses in Los Angeles of 4.8 percent.

Applying the elasticity from the economic literature, we estimate that this reduction in business taxes would lead to a 0.96 percent increase in output or employment. During this period, estimated output among firms subject to the business tax (as measured by reported gross receipts) totaled approximately $211 billion.[19] Increasing this by 0.96 percent would result in an estimated increase in output of approximately $2 billion. Employment in Los Angeles as reported by the state Employment Development Department was about 1.654 million during this period. Consequently, increased employment stemming from the elimination of the business tax would total about 15,875 additional jobs. Calculations for our elasticity analysis are shown in Figure 2.

**Figure 2: Elasticity Analysis**

| | | |
|---|---|---|
| Total state and local taxes business taxes FY 2010* | $ | 85,400 |
| LA share (based on share of employment) | | 10.36% |
| LA Amount | $ | 8,845 |
| LA Business Taxes FY 2010 | $ | 424.8 |
| Percent reduction in tax burden from elimination | | -4.80% |
| Average elasticity for state and local taxes | | -0.2 |
| Anticipated output change | | 0.96% |
| Total output for LA Firms | $ | 211,309 |
| Anticipated output amount** | $ | 2,030 |

*Source: Ernst & Young, "Total state and local businesses taxes." FY 2010.

** Note: Impact assumes total city expenditures are held constant.

Amounts in millions

### *Impact on City Revenues: Applying the Published Research*

Using the results of our regression analysis, we can translate this estimated output change into an estimated change in the city's non-business tax revenues. According to our regression results, each $1,000 increase in output is associated with a $13.33 increase in tax revenues. Therefore, based on the application of the results of the academic literature to the circumstances of the elimination of the business tax, we estimate that the increased economic activity stemming from the elimination of the business tax would result in an increase in non-business tax revenues of approximately $27.1 million (and a net revenue loss of $397.8 million).[20]

## The REMI Model

In addition to the application of the findings from the published economic research, we also analyzed the likely impact on the Los Angeles economy from the elimination of the business tax using the REMI model. REMI stands for Regional Economic Models, Inc., and is a widely used tool for analyzing the economic impact of policy changes at the state, regional, and local levels. In fact, REMI has been used by other jurisdictions to estimate the impact of changes to

[19] Gross receipts information provided by Los Angeles Office of Finance.

[20] Note that all output response estimates presented in this report assume that the level of city services is held constant. To the extent that revenue losses are accompanied by reductions in services, the output results presented will likely overstate the true output response, as businesses may react to the reduced level of public services by altering their relocation or expansion decisions.

gross receipts taxes, similar to the Los Angeles business tax. In 2010, the City of San Francisco used the REMI model to estimate economic changes stemming from a proposed tax reform that included a gross receipts tax.[21] Similarly, in 2005, the state of Ohio used the REMI model to analyze the economic effects of a series of proposed tax changes, including a commercial activity tax similar to a gross receipts tax.

One important advantage of the REMI model is the ability to create a model specific to a particular region. For purposes of the current analysis we analyzed the likely effects of eliminating the city's business tax using a model customized by REMI to specifically reflect the economy of the City of Los Angeles.

Most importantly, however, the REMI model is dynamic, which means it models the changes in behavior that are likely to result from a policy change, such as elimination of the business tax. For example, the REMI model adjusts price levels in response to a reduction in business costs, which causes business activity within a region to increase and also causes business activity to flow into the affected region from the rest of the economy. REMI also incorporates the geography of a particular region in estimating economic responses. This allows the REMI model to account for the geographic aspects that would influence the supply and demand for outputs (goods and services), as well as inputs (labor, capital and energy). This is especially important when examining a small geographic region such as the City of Los Angeles, because labor markets and consumption patterns within the city can be heavily influenced by the proximity of alternatives just outside of the city limits.

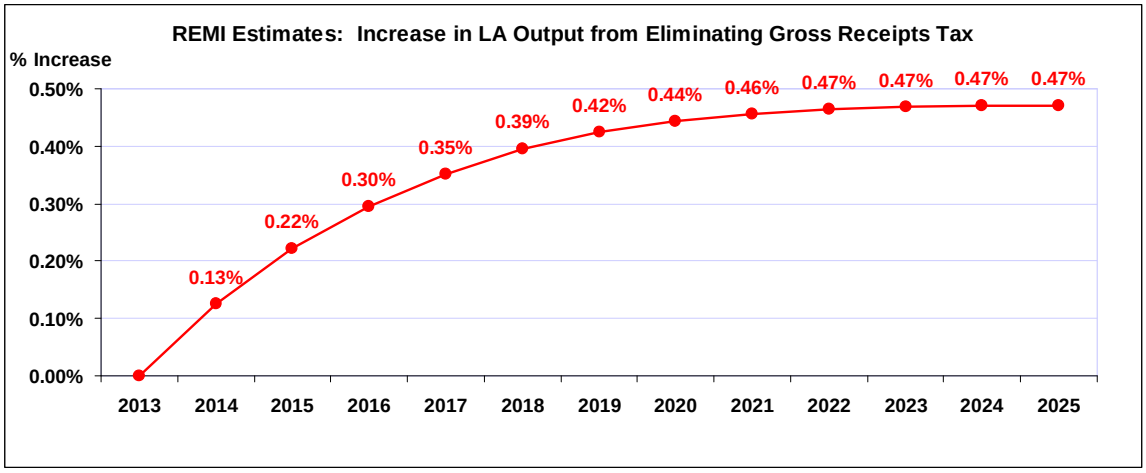
The REMI model uses parameters, such as the price elasticity of demand for each industry and the speed of economic responses, that are estimated using advanced statistical techniques. Many model parameters are customized to the region being analyzed – here, to the City of Los Angeles. In sum, the REMI model is a sophisticated modeling tool that combines multiple modeling types, including input-output (I-O), computable general equilibrium (CGE), econometric, and economic geography methodologies. Additional information about the REMI model is available in the appendix to this report.

### *REMI Results*

To model the economic impact of eliminating the City of Los Angeles' business tax using the REMI model, we treated the elimination of the tax as a decrease in production costs and examined the resulting output and employment changes. Specifically, we estimated the industry-by-industry breakdown of tax savings using data from the Los Angeles Office of Finance (the LATAX data), and applied these cost savings as an input to the REMI model to estimate the economic impact on the City of Los Angeles in terms of additional output and employment. Figure 3 (following page) presents the REMI estimates for the annual increase in output in the City of Los Angeles resulting from the elimination of the gross receipts tax.

[21] In 2010, the Blue Sky Consulting Group assisted the City and County of San Francisco's Chief Economist with an analysis of the impact of a series of proposed tax changes. The economic impact of these changes was modeled using the REMI model. San Francisco continues to use the REMI model for analysis of proposed tax changes, among other uses.

**Figure 3: Estimated Increase in LA Output Based on REMI Model**




As Figure 3 shows, total output in Los Angeles is expected to increase by up to 0.47 percent as a result of the elimination of the business tax.[22] Elimination of the business tax would create an immediate increase in output in the first year of implementation, but, according to our results from the REMI model, it would take about 10 years before the output change reaches its maximum level.

**Figure 4: Jobs Created from Elimination of Business Tax by Sector**

| Industry | Estimated Increase in Jobs | % of Total |
|---|---|---|
| All Industries | 7,640 | 100.0% |
| | | |
| Industry Sectors: | | |
| Retail Trade | 1,780 | 23.3% |
| Professional and Technical Services | 1,760 | 23.0% |
| Finance and Insurance | 1,280 | 16.8% |
| Administrative and Waste Services | 840 | 11.0% |
| Health Care and Social Assistance | 750 | 9.8% |
| Accommodation and Food Services | 410 | 5.4% |
| Wholesale Trade | 250 | 3.3% |
| Other Services, except Public Administration | 200 | 2.6% |
| Construction | 110 | 1.4% |
| Transportation and Warehousing | 90 | 1.2% |
| All Other | 170 | 2.2% |

Although the increase in economic activity resulting from the elimination of the business tax would be felt throughout the economy, the changes in employment would not be evenly distributed. As shown in Figure 4, retail trade, professional and technical services, and finance and insurance would experience the largest job gains, while transportation and warehousing and construction would not benefit to the same extent. Overall, the elimination of the business

[22] These results reflect the assumption that all of the output increase stemming from the elimination of the business tax would occur in sectors that currently pay business taxes. In fact, at least some of the benefit is likely to extend to non-taxed sectors. Therefore, these results may slightly overstate the fiscal impact of the elimination of the business tax.

tax is expected to result in approximately 7,640 additional jobs across the entire city economy.

The differential impact of the business tax elimination is a result of several factors. First, different sectors of the economy respond differently to tax changes. Some sectors (or firms), particularly those that compete in national or international markets are particularly sensitive to changes input costs. Firms that compete locally, however, have a greater ability to shift some portion of the tax burden forward to consumers in the form of higher prices, since all similarly situated businesses face the same tax rates. These firms are therefore less sensitive to tax changes. Second, not all sectors pay the same rate or amount of business taxes, so the resulting tax elimination represents a different fraction of each sector's output and costs.

### *Impact on City Revenues: The REMI model*

Using the results of our regression analysis, we can translate the estimated output change from the REMI model into an estimated change in the city's non-business tax revenues. Applying the 0.47 percent increase in output, we estimate that elimination of the gross receipts tax would result in an increase in output of about $996 million.[23] According to our regression results, each $1,000 increase in output is associated with a $13.33 increase in tax revenues. Therefore, based on the application of the results of the REMI model, we estimate that the increased economic activity stemming from the elimination of the business tax would result in an increase in non-business tax revenues of approximately $13.3 million and a net revenue loss of approximately $412 million.[24]

## Fiscal Impact Results

As the analysis presented in the previous sections demonstrates, each of the approaches we employed indicates that eliminating the city's business tax would have a positive impact on the level of economic output in Los Angeles, but this increase in output would not be sufficient to offset the revenue loss to the city stemming from the elimination of the gross receipts tax.

Both of the methods we applied indicated that the elimination of the gross receipts tax would result in an increase in output of less than 1 percent. Applying the larger estimate from the two approaches we employed (the results from the published economic research) we find that the elimination of the gross receipts tax would result in a net revenue loss of almost $400 million.

These findings show the long-run, or fully phased in, results of the gross receipts tax elimination. To the extent that the business tax elimination was phased in over a period of years, as recommended by the BTAC, the net revenue losses would be smaller during the phase-in period, as would the offsetting increases in economic activity.

### *Putting the Results in Context*

In order to provide some context for these results, we compared the elimination of the business tax to a reduction in wage rates for Los Angeles businesses. If the amount of the business tax

[23] These results reflect what the output increase would have been had the elimination of business tax been fully phased in and implemented in 2010.
[24] Here, again, we note that these results assume that the level of city services is held constant.

($424.8 million in 2009-2010) was applied instead to wages for Los Angeles workers, it would translate into a reduction in wages of about 13 cents per hour (or about 0.54%).[25] While even a modest cost advantage for businesses could potentially stimulate economic activity and cause some businesses to relocate to Los Angeles, a reduction in costs of this magnitude could easily be overshadowed by variations in worker productivity and costs for wages, rent, relocation, and a host of other factors.

## HOW OUR RESULTS DIFFER FROM PREVIOUS ANALYSIS

Our work follows a previous report prepared for the BTAC by Professor Charles Swenson.[26] Professor Swenson's report concludes that elimination of the city's business tax would likely generate sufficient additional economic activity such that the increase in other city revenue sources, such as sales and property taxes, would more than offset the loss of business tax revenue. In contrast, we find that, while the elimination of the business tax would increase economic activity, the resulting increase in revenues would not be sufficient to offset the revenue loss from elimination of the business tax.

Based on our review of the methodology employed by Professor Swenson, we find the following:

- Professor Swenson relied on an analysis of the change in economic activity for a single year (2001), without controlling for underlying economic factors that might explain such a change, in addition to the business tax cut (e.g., the dot-com bust and recession that occurred that year, leading to significant job losses in Northern California in 2001 while largely sparing Los Angeles during the same period).
- Professor Swenson's methodology is very sensitive to the data source, measure of economic activity, and tax period analyzed. Rather than relying on all of the available information, his reported results rely on just a portion of the available data. Incorporating other data sources, measures, or time periods would lead to a different conclusion.
- Professor Swenson's results are not supported by the body of published research on the impact of business tax cuts.

Although there are several reasons for the difference in results between our research and Professor Swenson's, there are numerous similarities:

- Each analysis sought to estimate the likely change in economic activity stemming from the elimination of the business tax, and then separately measure the likely change in municipal revenues that would result from the estimated change in economic activity.
- Both analyses treat businesses taxes as an operating cost for businesses, with reductions in these taxes resulting in increased investment, sales, and employment.

[25] These results assume a 2000 hour work week, and are based on the average wage rate as reported by the State Employment Development Department for 2010 ($23.84) and total Los Angeles Employment for the same period (1,657,700). Total taxes per work hour = $424.8 million/ (2000 x 1,657,700) = $0.13. Taxes as a percent of average wages = $0.13/$23.84 = 0.54 percent.

[26] Swenson, Charles (2011), op. cit.

- Both our analysis and Professor Swenson's employed a regression analysis approach to estimate the likely change in city revenues stemming from a given change in economic activity. Indeed, we analyzed very similar data, employed similar methods, and arrived at similar results.
- Both of our analyses relied, to a large extent, on data provided by the City of Los Angeles, specifically historical city revenue data and the LATAX database, which tracks gross receipts and taxes paid, among other factors, for Los Angeles businesses subject to the city's business tax.[27]
- Both analyses have cited the same previous academic literature, which finds that the elasticity of economic activity with respect to a change in state and local tax rates is approximately -0.2. Specifically, we have both cited and relied upon work performed by Dr. Timothy Bartik.[28]

The important differences between our two approaches, therefore, stem almost entirely from our respective estimates of the likely economic impact of eliminating the city's business tax and not from the change in revenues that would result from a given change in economic activity.

## Review of Professor Swenson's Findings

### *Professor Swenson's Methodology Does Not Adequately Account for External Economic Factors*

In order to estimate the economic impact of the elimination or modification of the Los Angeles business tax, Professor Swenson employs a "difference in difference" approach in which he looks "at differences in trends in Los Angeles firms before and after the tax change, and compare[s] that difference in trend to the calculated difference in trends for a control group."[29] Professor Swenson notes that "the difference-in-the-difference in trends between the Los Angeles firms, and the control group, is *assumed* [emphasis added] to be the result of the tax change."[30] This assumption is fundamental to his analysis, but is not adequately supported by data or cited research.

Professor Swenson compares small Los Angeles firms to small California firms located outside of the City of Los Angeles and to larger firms within the city. Such a simple comparison does not effectively account for factors, other than the tax change he is analyzing, that might explain the difference in growth rates between the groups he is examining. For example, Professor Swenson compares the change in the rate of growth for small LA firms from 2000 to 2001 to the change for small firms located elsewhere in California during the same period. As we know, 2001 was a tumultuous period economically for California, with the dot-com bust beginning that year following several years of start-up and high tech related growth. If the effects of this boom and bust were evenly felt throughout the state, then a simple comparison of the change in trends, as Professor Swenson makes, might help to isolate the impact of the city's 2001 tax cut. However, the effects of the recession that began in 2001 were not evenly

[27] Here, we note that even businesses that do not have a tax liability, such as small businesses subject to the small business exemption, must file with the city.
[28] Note that our analysis also relied upon a more recent meta-analysis performed by Michael Wasylenko, although the results are similar to those reported by Bartik.
[29] Swenson, op. cit, p. 30.
[30] ibid.

distributed throughout the state. According to one analysis of the 2001 recession, "not surprisingly given the disproportionate importance of the high-tech sector in the state's overall job loss, this recession has had a much more pronounced impact on the San Francisco Bay Area than on the rest of the state."[31] The report goes on to note that "Los Angeles County was […] nearly immune to the recession until the beginning of 2002."

What this analysis of the 2001 recession makes clear is that, not only was 2001 a time of significant economic change in the state, but the unique circumstances of each region had an impact on that region's response to these changes. Therefore, while the 2001 Los Angeles business tax reduction likely had an impact on the level of economic growth in the city, attributing all of the differential in growth rates between LA and non-LA firms to this tax cut ignores the much larger economic changes taking place during the same period.

This example points to a fundamental shortcoming in the analytical approach employed by Professor Swenson. Although his approach seeks to control for the impact of other, external economic factors, the comparison group(s) selected are not sufficiently similar to isolate the difference in economic performance to the examined tax cuts. In other words, many factors not accounted for in the analysis, in addition to the tax cuts, could explain the difference in observed economic output. Indeed, Professor Swenson acknowledges this point in the course of his analysis of the impact of the 2007 small business tax cut, noting that "it is important to remember that the Great Recession began in late 2007 and may have had a disproportionate effect on small firms."[32] Citing this fact, Professor Swenson chooses to rely on his analysis of the 2001 tax cut, while ignoring the results of his analysis when applied to the 2007 tax cut (which failed to show an effect). Professor Swenson does not explain why the 2007 recession is relevant when the 2001 recession is not, but it is precisely this sort of unaccounted for external factor that calls into question the reliability Professor Swenson's results.

### *High Degree of Variability in Reported Data*

A second shortcoming of the approach employed by Professor Swenson is the highly variable nature of the reported results. Specifically, in seeking to measure the impact of two tax cuts occurring in 2001 and 2007, Professor Swenson uses two distinct data sources and reports measures of employment, number of firms, and gross receipts. Specifically, Professor Swenson relies on data from the LATAX database (which contains data collected by the city for purposes of determining companies' tax liability) and the NETS database (collected from surveys of businesses by Dun & Bradstreet). His measures of economic output or activity are number of firms (from LATAX and NETS), output or gross receipts (from LATAX) and employment (from NETS).

To the extent that the methodology he employs is accurately measuring the impact of the tax cuts as opposed to other, unrelated economic factors, one would expect the results, regardless of the measure of economic activity or data source, to be relatively similar. Instead, however,

[31] Pastor, Manuel and Zabin, Carol, "Recession and Reaction: The Impact of the Economic Downturn on California Labor." *The State of California Labor*, University of California Institute for Labor and Employment, UC Berkeley (2002).
[32] Swenson, op. cit, p. 43.

a comparison of the results across measures, data sources, and time periods reveals a considerable degree of variability.

**Figure 5: Summary of Swenson Measures**

| Measure | Tax Change Year | Diff Size, LA | Same Size, Non-LA | Source |
|---|---|---|---|---|
| Employment | 2001 | 8.66% | 3.07% | NETS |
| Num Firms | 2001 | 5.31% | 2.96% | NETS |
| Num Firms | 2001 | n/a | 29.47% | NETS (New Only) |
| Num Firms | 2001 | -0.01% | n/a | LATAX |
| Num Firms | 2001 | 3.38% | n/a | LATAX (Non-Discovery) |
| Gross Receipts | 2001 | -15.19% | n/a | LATAX |
| Gross Receipts | 2001 | -2.86% | n/a | LATAX (Non-Discovery) |
| Employment | 2007 | -5.96% | -0.86% | NETS |
| Num Firms | 2007 | -2.29% | 1.61% | NETS |
| Num Firms | 2007 | -1.89% | n/a | LATAX |
| Gross Receipts | 2007 | -2.29% | n/a | LATAX |

Note: measures cited by Swenson as being incorporated into his analysis shown in green. Percentages are calculated by the Blue Sky Consulting Group based on data presented by Professor Swenson.

As Figure 5 indicates, Professor Swenson reports data for nine separate measures of the impact of the 2001 tax cut, including employment, number of firms, and gross receipts. His results range from a low of -15.19 percent to a high of 29.47 percent. Professor Swenson makes various arguments about why certain of these measures are not appropriate to use in his calculations. Nevertheless, the simple fact that the results of the methodology employed are so sensitive to the data source or measure employed is sufficient reason to give a reader pause.[33]

When examining the impact of the 2007 small business tax cut, Professor Swenson reports data for six measures, ranging from a low of -5.96 percent to a high of 1.61 percent. Ultimately, Professor Swenson concludes "the 2007 new business exemption appears to have had little measurable impact on job creation in the city."[34] And while he does find that one of the three measures of the number of firms does show an impact, he ultimately chooses to rely on his results from the 2001 tax cut, stating that this tax cut is "probably more representative of an expected response" than is the 2007 tax cut because the 2007 results are confounded by the impact of the Great Recession. What is not explained is why one methodology applied to different measures of economic activity or data sources would produce such divergent results.

[33] Professor Swenson notes that the reported values for "gross receipts and taxes paid should be interpreted with caution, since both would be expected to decline after the exemption." As a result, Professor Swenson appears not to have relied upon the gross receipts measures in estimating the economic changes stemming from the tax cuts. Here we note, however, that while tax revenues would be expected to decline, the same is not necessarily true for gross receipts, as companies subject to the 2001 tax cut were required to report gross receipts to the city even if they did not have a tax liability. Consequently, gross receipts likely do represent an accurate measure of economic activity, albeit one that paints a different picture than does an analysis based on the NETS data.

[34] Swenson, op. cit., p. 43.

In the face of this very high degree of variability, Professor Swenson nevertheless chooses to rely on a subset of the results that he apparently considers reliable, while essentially ignoring the others.

### *Professor Swenson's Estimates Are Not Consistent with the Body of Previously Published Research*

According to Professor Swenson, "previous studies of municipal tax changes found an average elasticity of about -.21…, I assume that the average 'business expansion' elasticity related to changes in the LA business tax is -.26."[35] Presented in this context, Professor Swenson's estimate appears to be quite similar to previously published findings (i.e., -.21 is apparently quite close to -.26). However, these two numbers reported by Professor Swenson are measuring different things.

As previously noted, the best available summary of the published research indicates that the average elasticity of business output with respect to state and local business taxes is indeed about -.2. But, as Dr. Bartik notes, "these are the effects on economic development for percentage changes in *overall* [emphasis added] state and local business taxes; the effects on economic development of a percentage change in *any particular* [emphasis added] state or local business tax, which is just one portion of the overall state and local business tax burden, would be lower."[36]

The elasticity result that Professor Swenson calculates is, instead, the elasticity of overall economic output a with respect to *single* tax; this is a very different result than the overall -0.2 number reported in the published literature. According to Professor Swenson's reported results, eliminating *just* the Los Angeles gross receipts tax would lead to an increase in economic activity in Los Angeles of 26 percent, as presented in Figure 6.

**Figure 6: Prof. Swenson's Elasticity Measure vs. Published Elasticity Estimates**

| | |
|---|---|
| Reported Single-Tax Elasticity Used in Prof. Swenson's Calculations | -0.26 |
| Implied Change in Economic Activity from Elimination of LA Business Tax | 26.0% |
| LA Business Tax Share of Businesses Total State & Local Tax Burden* | 4.8% |
| Implied Elasticity for Overall Change in State and Local Tax Burden | -5.42 |
| Comparable Elasticity from Published Research | -0.20 |
| Multiple of Prof. Swenson's Elasticity to Published Research | 27 |

* Blue Sky calculations based on Ernst & Young 2010 data.

In order to make Professor Swenson's single tax elasticity comparable to the overall number reported in the literature, we need to estimate what fraction of LA firms' overall state and local tax burden is comprised of the LA business tax. Using tax data from Ernst & Young, we estimated that the LA business tax comprises about 4.8 percent of total business taxes for LA firms.[37] Therefore, an elimination of just the LA business tax represents a 4.8 percent reduction in businesses' overall state and local tax burden. If this reduction is to produce an increase in

[35] Swenson, op. cit, p. 44.
[36] Bartik, Timothy, "Michigan's Business Taxes and Economic Development: Possible Reforms." Testimony prepared for the Michigan House of Representatives, 2006.
[37] See previous section, "Application of Published Research to the Case of Los Angeles," for additional details on this calculation.

output of 26 percent as Swenson's results indicate, the implied overall elasticity of output with respect to state and local business taxes is actually -5.42, a result that is 27 times greater than the -0.2 reported by Bartik.

### Can Professor Swenson's Analysis Be Relied Upon?

In addition to the problems with Professor Swenson's results and methodology discussed above, his analysis is subject to several additional criticisms.

First, in the addendum to his report dated August 23, 2011, Professor Swenson makes an "upward adjustment" to the results to account for the impact of reduced unemployment on sales tax collections. However, while it is undoubtedly the case that reducing unemployment would increase sales tax collections, this effect is already accounted for in the original results presented in the report. Specifically, Professor Swenson estimates the impact on city revenues, including sales taxes, of an increase in economic activity (which would include a reduction in unemployment). Therefore, his previously reported results already include the effects of the expanding economy on sales tax collections. Consequently, including this "additional" sales tax – some $82 million – is double counting the sales tax effect that would result from elimination of the business tax, according to Professor Swenson's analysis.

Professor Swenson also fails to provide any evidence to support the conclusion that, even if his analysis of the 2001 tax cut were accurate, it would translate into similar effects in the broader Los Angeles economy. The 2001 tax cut affected a very small segment of the Los Angeles economy: firms less than two years old with less than $500,000 in gross receipts. While it is possible that all Los Angeles firms would respond to a tax cut in the same manner as these new, very small firms, Professor Swenson presents no evidence to demonstrate as much.

Ultimately, our conclusion is that Professor Swenson's analysis is not a reliable means with which to predict the likely impact of elimination of the business tax.

## EXPERIENCE OF OTHER JURISDICTIONS

Although many jurisdictions throughout the country have considered and adopted business tax reductions, our research did not yield any examples of other jurisdictions that eliminated or reduced business taxes based on an assumption that the tax reduction would pay for itself through increase economic activity and follow-on revenues.

## CONSIDER THE ALTERNATIVES

In addition to the various alternatives to elimination of the business tax considered by the BTAC, two alternatives were proposed in a November 7, 2012 joint memorandum from City Administrative Officer and the Chief Legislative Analyst. This section provides the results of using the REMI model to analyze these two the alternatives. Alternative 1 involves extending the current 3-year new business tax holiday, which is scheduled to end in 2012. Alternative 2 involves freezing the tax base for all existing businesses in the city at their current level.

## Alternative 1: Extend the New Business Tax Holiday

Extending the new business tax holiday would result in a direct reduction in taxes for new business in Los Angeles (those less than three years old). Our approach to modeling the economic and revenue effects of this proposal was similar to the approach we used to model the effects of business tax elimination. First, we estimated the amount of the taxes avoided (a reduction in costs for affected businesses). Next we input these cost reductions into the REMI model and estimated the resulting increase in output. Finally, we translated this output change into a revenue impact for the City using the results of our regression analysis.

To estimate the amount of the tax revenue loss and cost decrease associated with affected businesses, we used the LATAX data to determine the proportion of total output (gross receipts) from firms that have been operating in Los Angeles for up to three years. This analysis shows that such companies account for 7.8 percent of all reported gross receipts, and we estimate that extension of the tax holiday would result in a corresponding decrease in expected tax revenue of 7.8 percent, or about $33.1 million (before accounting for any offsetting revenue increases due to economic growth stemming from the tax cut).[38]

Next, using the REMI model, we calculated the impact of this cost savings on total output. The results show that extending the three-year new business tax holiday would result in an annual increase in output of 0.04 percent, or about $77.3 million.[39] Applying our regression analysis estimate that an additional $13.33 in non-business tax revenue is generated for each $1,000 increase in output, this translates into an increase of approximately $1.0 million in non-business tax revenue, for an overall annual decrease of $32.1 million in total tax revenue.

## Alternative 2: Freeze the Tax Base

The second alternative proposed in the CAO/CLA memo suggests freezing the existing tax base. Freezing the tax base would have the effect of altering the incentives faced by affected businesses, as any new investment or expansion activity would be untaxed. Indeed, the incentives faced by new businesses, businesses relocating to Los Angeles, and existing businesses that choose to expand would mirror the incentive effects of eliminating the business tax entirely. However, existing businesses would still be required to make tax payments to the city (and would not have available for investment and expansion the amount of their current tax payments), which would tend to reduce somewhat the economic response relative to complete business tax elimination. Therefore, the ultimate extent of the output increase from freezing the tax base would likely fall somewhere between two extremes. On the one hand, freezing the tax base would have incentive effects that mirror those of business tax elimination in that new investments or business relocations would be untaxed. On the other, affected businesses would benefit just to the extent that their costs were lower by the amount of business taxes foregone, so the amount of resources available for investment or expansion would be much smaller relative to the case of complete elimination of the business tax.

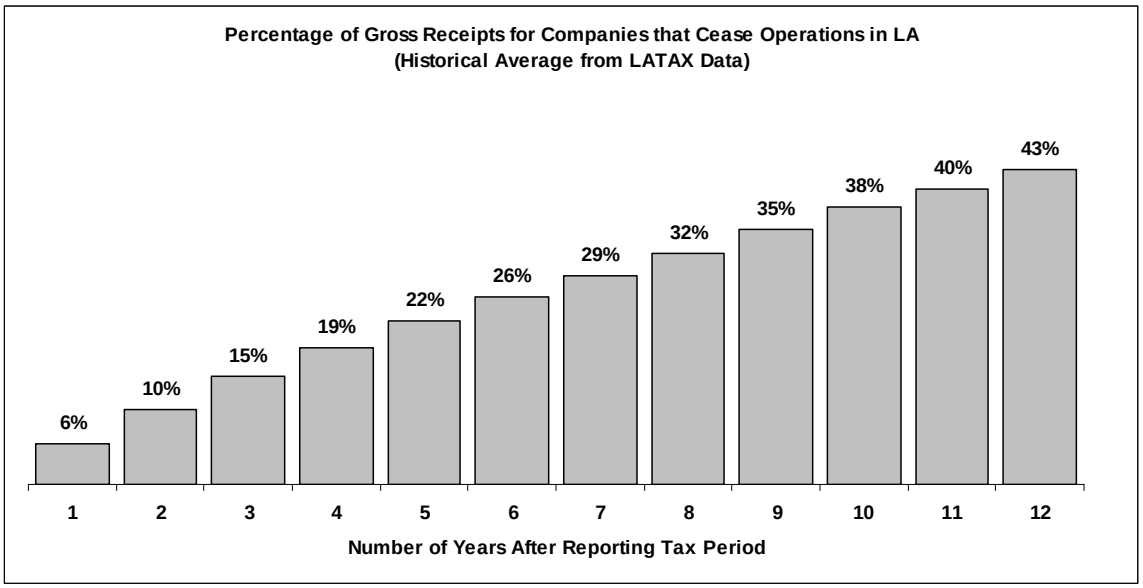
[38] We estimated the effect based on 2009-10 business tax revenues, prior to the period in which the three year new business tax holiday was put into effect.

[39] In order to simplify comparison with numbers presented elsewhere in this report and with the results prepared by Professor Swenson, these figures reflect the impact in 2010 (i.e. what would have happened had this policy been fully in effect and phased in as of that year).

One important difference between this alternative and elimination of the business tax, of course, is that the amount of revenue lost would be considerably smaller. Each year, the amount of business tax revenue would decrease as a result of business failures (or out of area relocations). Over time, a significant erosion of the business tax base would occur, but the fiscal effects of this revenue loss would be offset to some extent as a result of the increase in economic activity that resulted from the tax reduction.

The first step in analyzing Alternative 2 was to estimate the reduction in the tax base that would occur over time. To make our estimates, we used the LATAX data to calculate the proportion of total output (gross receipts) from firms that cease operations over time in LA. Figure 7 shows the results of this analysis, indicting that the percent of output accounted for by such firms historically has increased from an average of 6 percent in the first year up to 43 percent by year 12. Applying this historical pattern, we estimate that, over time, the amount of business taxes would decline to 43 percent of current levels within 12 years, with increasing declines thereafter (although we lack sufficient data to estimate the trend beyond this point). Had such a policy been fully implemented in 2010, the decrease in tax revenue would have been $183.1 million (43 percent of 2009-2010's $424.8 million in business tax revenues).

**Figure 7: Gross Receipts Loss from Firms Ceasing Operations in LA**




We then used REMI to model the impact of this loss in the gross receipts tax base on output in two ways. To estimate the lower bound effect, we treat the loss in tax revenue as an equal decrease in production costs (similar to the way we modeled business tax elimination and Alternative 1). This estimate in effect discounts the incentive effects on growth or new investment, and instead looks just at the reduction in production costs brought about by the tax change. The results of this analysis indicate that the impact of the tax (when fully implemented) would be an increase in output of 0.16 percent, or about $344 million.[40] Applying our estimate of $13.33 in increased non-business tax revenue per $1,000 in increased output, this

[40] For consistency, these results are based on 2010 gross receipts and tax revenues.

translates into an increase of $4.6 million in non-business tax revenues, or an overall loss of $178.5 million in tax revenues to the City
(-$183.1 + $4.6 = 178.5).

To estimate the upper bound increase in output, we assumed that the incentive effects would dominate, and that the output increase from freezing the base would equal the response from complete elimination of the business tax. Under this set of assumptions, the resulting increase in output would be 0.47 percent, or about $996 million. Applying our estimate of $13.33 in non-business tax revenue per $1,000 in increased output, this results in a $13.3 million increase in non-business tax revenue, for an overall annual loss of $169.8 million in tax revenue.

The table below summarizes the results of our analysis of the two alternatives to eliminating the gross receipts tax, including the upper and lower bound estimates for alternative 2 discussed here. Ultimately, the likely revenue change from alternative 2 would be somewhere between these two estimates.

**Figure 8: Analysis of Alternative Tax Proposals**

| | Alternative 1: New Biz 3-yr Tax Holiday | Alternative 2: Freezing Tax Base Low Estimate | High Estimate |
|---|---|---|---|
| 2010 Business Tax Revenues ($M) | 424.8 | 424.8 | 424.8 |
| Change in Biz Tax Revenues Estimated by 2025 (%) | -7.8% | -43.1% | -43.1% |
| Corresponding Change in Biz Tax Revenues ($) | (33.1) | (183.1) | (183.1) |
| 2010 Gross Receipts ( LATAX ) ($M) | 211,136 | 211,136 | 211,136 |
| Estimated Increase in Output from Tax Change | 0.04% | 0.16% | 0.47% |
| Estimated Increase in Output ($M) | 77.3 | 343.5 | 996.0 |
| Addtl Non-Biz Tax Revenue per $1000 of Output | $13.33 | $13.33 | $13.33 |
| Estimated Non-Biz Tax Revenue Increase ($M) | 1.0 | 4.6 | 13.3 |
| Net Revenue Impact | (32.1) | (178.5) | (169.8) |

Although each of these two alternatives would have a positive impact on the level of economic output in Los Angeles, each would also result in a significant reduction in municipal revenues, according to our analysis.

## Sectors Most Responsive to a Reduction in the Business Tax

Using the REMI model, it is possible to estimate the response of the Los Angeles economy to changes in business taxes for individual sectors. For each sector, we estimated the amount of business taxes paid under current law based on the LATAX data. We then modeled the effects on the Los Angeles economy of eliminating the business tax just for that sector.

Figure 9 (next page) shows the sectors that are most responsive to a change in business taxes in terms of the number of jobs created. As Figure 9 indicates, elimination of the business tax for the professional and technical services sector would result in a gain of approximately 1,730 jobs and a net reduction in general fund revenues of about $87 million. Eliminating the business tax for the retail trade sector would result in the addition of nearly as many jobs, about 1,630, but at a cost some $15 million less ($62 million). Similarly, eliminating the tax for the administrative and waste services sector would result in an increase of about 790 jobs, and would produce a net revenue loss of about $24.7 million, according to our REMI analysis.

In contrast, eliminating the tax for the construction sector would produce just 140 jobs, roughly 1/5th as many as would be created due to elimination of the tax on administrative services, but at a similar cost of about $21.9 million.

**Figure 9: Industry Sector Response to Elimination of the Business Tax**

| Industry Sector for which Business Tax is Eliminated | Net Revenue Change ($M) | Estimated Additional Jobs |
|---|---|---|
| All Industries | (411.6) | 7,640 |
| | | |
| Top 10 Industry Sectors: Ordered by Number of Jobs Created: | | |
| Professional and Technical Services | ( 87.3) | 1,730 |
| Retail Trade | ( 62.0) | 1,630 |
| Finance and Insurance | ( 40.3) | 1,160 |
| Administrative and Waste Services | ( 24.7) | 790 |
| Health Care and Social Assistance | ( 48.6) | 740 |
| Accommodation and Food Services | ( 10.1) | 440 |
| Real Estate and Rental and Leasing | ( 34.1) | 340 |
| Wholesale Trade | ( 41.9) | 250 |
| Other Services, except Public Administration | ( 8.0) | 190 |
| Construction | ( 21.9) | 140 |

Note: the above figures represent the response for the entire LA economy from the elimination of the business tax for an individual industry sector.

These results demonstrate that relative responsiveness of various sectors to the elimination of the business tax varies across industries. These variations are a result of multiple factors, including the relative tax rates for each industry and the extent to which firms in each industry compete locally as opposed to nationally.

In addition, the responsiveness of the City of Los Angeles economy to elimination of the business tax (whether in a single sector or if applied to all sectors) depends on the extent to which local firms rely on local sources for inputs to the production process. To the extent that firms hire workers that live in the City of Los Angeles, purchase supplies and raw materials from local City of Los Angeles suppliers, and raise investment capital from local sources, the effects of a reduction in the business tax will be much larger. However, to the extent that newly hired workers, increased supply contracts, or additional sources of capital are located outside of the city's boundaries, the effects will be much smaller. If newly hired workers live outside of the city, they will be much more likely to spend their earnings closer to where they live than in the city. Similarly with suppliers; if suppliers to a firm that expands as a result of the elimination of the business tax are located outside of the city, then the economic benefits of the reduction of the business tax will "leak out" of the city, impacting surrounding areas.

Consequently, the impact of the elimination of the business tax will have a larger impact to the extent that it is concentrated in those firms of sectors that hire more workers or purchase more supplies locally.

# CONCLUSION

The results of our research and analysis indicate that the City of Los Angeles economy is responsive to changes in business taxes. In other words, reducing taxes is likely to lead to an

increase in economic output and employment (while raising taxes would have the opposite effect), to the extent that other factors that influence the level of economic activity remain unchanged.

Applying the larger of the two estimates we prepared, we calculate that eliminating the business tax would result in an increase in economic output of about $2 billion, or by a little less than one percent. This finding is supported by the body of academic research on the impact of state or local tax changes on local employment and economic output and is similar to the results obtained from modeling the effects of eliminating the business tax using the REMI model.

This increase in economic output would, in turn, increase the amount of revenues collected by the city's general fund. We estimate that the output increase stemming from the elimination of the business tax would lead to an increase in non-business tax revenues of approximately $27.1 million. However, this revenue increase would not be sufficient to offset the loss of business tax revenue ($424.8 million). Therefore, we estimate that eliminating the business tax would lead to a net reduction in the city's general fund revenues of nearly $400 million.

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# APPENDIX A: THE REMI MODEL

### *How the REMI Model Works*

The REMI model combines multiple modeling types, including input-output (I-O), computable general equilibrium (CGE), econometric, and economic geography methodologies. To better understand the basis of the model, it is helpful to examine each of these components individually.

Standard Input-Output (I-O) models examine the interaction among industries, households and the government sector within a region, as well as imports into and exports from that region. I-O models track output and demand among these different actors and quantify the sales from each industry sector to every other sector in terms of raw materials, intermediate goods, and final goods. Standard I-O models assume prices are basically fixed, and that the relative demand among industry sectors stays constant, such that changes in supply and demand impact output but are not reflected in price changes or behavioral changes. The PI+ model is similar to an I-O model in that I-O inter-industry linkages are embedded in the model; thus, when the output of one industry (the direct effect) changes, the output of industries that sell to that firm change (the indirect effects), and the incomes of workers in both direct industry other local industries that supply inputs to that direct industry are spent locally, creating additional impacts (the induced effect). However, REMI differs from an I-O model because the REMI model estimates prices that are determined endogenously and allows factor prices (e.g., wages) to be bid up or down in response to other changes in the model. It also allows for changes in the labor force over time via net migration into or out of the region.

Computable General Equilibrium (CGE) models use a set of mathematical relationships that determine prices of goods and services and the returns on factors of production. CGE models use production functions, elasticity measures and industry-specific market share data for the region being examined to allow the industries, households, and governments in that region to interact with one another and the rest of the world, and to modify their behavior in response to price changes until a new market-clearing equilibrium is established. REMI utilizes CGE model techniques to allow such behavioral changes to occur, using empirically-derived estimates of the time over which these adjustments take place to provide annual estimates of the impact of a change in the region. The REMI model follows such CGE conventions, allowing prices to adjust and industries, households and governments to adjust their behavior accordingly. Housing, housing prices, land absorption, land prices, etc., are determined endogenously within the model. It is also similar to a CGE model in that factors of production (including labor) move between regions, but these flows occur using an empirically-determined time adjustment process, rather than instantaneously as in a static CGE model or in an indeterminable amount of time as in some dynamic CGE models.

REMI's model is an econometric model in the sense that the parameters used in the model, such as the price elasticity of demand for each industry and the speed of economic responses, are estimated econometrically using advanced statistical techniques. REMI constructs its equations using panel data (that is, pooled time-series, cross-section data) that are available for specific counties. This technique allows REMI to estimate the relationships and determine how those

relationships are correlated with county-specific characteristics such as industry mix, demographic characteristics, etc. Thus, the right-hand side variables in these equations would be different for different counties, resulting in different estimates across regions, although the equation (the underlying structural relationship) remains the same. This allows the model parameters to be customized to the region being analyzed – here, to the City of Los Angeles.

Finally, REMI incorporates New Economic Geography features in its PI+ model. New Economic Geography models examine the location, distribution and spatial organization of economic activities. The use of economic geography modeling allows the REMI model to account for the geographic aspects that would influence the supply and demand for outputs (goods and services), as well as inputs (labor, capital and energy). This is especially important when examining a small geographic region such as the City of Los Angeles, because labor markets and consumption patterns within the city can be heavily influenced by the proximity of alternatives just outside of the city limits.

### *REMI Modeling Methodology*

To model the economic impact of eliminating the City of Los Angeles' gross receipts tax in the REMI model, we treated the elimination of the tax as a decrease in production costs.

We first ran a version of the REMI model with no changes to generate a baseline forecast for the years 1990 through 2025.[41] This provides the baseline against which the economic activity associated with the tax change will be compared.

We then used the LATAX data to quantify the direct revenue associated with the gross receipts tax by industry. The LATAX database provides the actual annual tax revenues by company for 1997 through 2011. The REMI model has 66 industry categories and provides a map based on NAICS (North American Industry Classification System) codes for these industry categories. We used the self-reported NAIC code in the LATAX data, provided by each company at the time of registration, to assign each LATAX company to the corresponding REMI industry category. We added up the annual gross receipts tax paid in each year across companies in each industry group to get the annual totals by REMI industry.[42] To forecast the value of the foregone gross receipts tax revenues through 2025, we used the REMI baseline estimate of economic output and assumed the foregone gross receipts tax revenues as a percent of output would remain constant throughout the period.

Using this industry-specific forecast of cost savings to businesses resulting from the elimination of the gross receipts tax, we applied the REMI model to estimate the economic impact on the City of Los Angeles in terms of additional output and employment.

[41] The current REMI model uses historical data through 2009 and forecasts values for 2010 forward.
[42] There were a small number of companies that that did not have valid NAICS codes, representing from 0.03% to 0.06% of total annual gross receipts tax revenue in any given year. Taxes paid by these companies were allocated proportionally across the REMI industry groups.