Analysis by

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AN EXAMINATION OF

THE ECONOMIC IMPACT OF PROPERTY TAX LEVY CAPS

ON ECONOMIC ACTIVITY IN NEW JERSEY

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EXECUTIVE SUMMARY

This study analyzes the effects on the New Jersey economy of the 2.0 percent cap on property tax levy growth that became effective in January 2011. To conduct this study, we use a regional computable general equilibrium (CGE) model. This New Jersey CGE model evaluates the effects of this policy on total economic output, household disposable income and industry sales in various industrial sectors. Our model includes 9 household income groups, and 41 industry sectors based on the 3-digit NAICS codes. We examine both long- and short-run effects of these caps.

In the short run, we find a modest effect of the property tax caps on aggregate fiscal and economic measures. Our model suggests the value of output produced in the state (gross regional product) will decrease by 0.16 percent over the short run as government, business and households adjust to the changes. This finding is consistent with other studies that find very small short-run impacts on broad measures of economic activity due to fiscal policy.

Over the long run, we find the effects on total economic activity to be strongly positive. Our model suggests that the effect of the caps will cause total production (GRP) to increase by 1.5 percent. The long run is a period over five years.

> "Over the long run [5 years], we find the effects on total economic activity to be strongly positive."

Further, the property tax levy growth caps have a relatively inconsequential effect on household income in the short run, but a larger effect in the long run. For example, higher income households experience larger gains in income. The average income gain attributable to the property tax caps is around $1,129.

With the imposition of property tax levy growth caps, aggregate household property taxes decrease by about 3.0 percent (about $160 million) in the short run and almost 2.0 percent ($106 million) in the long run. The effect on the average household is quite small, averaging less than $100 per household in both the long and short run. State and local government revenue from business property taxes decreases by approximately $218 million in the long run. Most business sectors experience around a 3 percent reduction in business property taxes paid in the short run and 1.5 to 2.0 percent decrease in the long run. Long run decreases are smaller due to increases in economic activity, which puts upward pressure on property values and increases the home ownership rate.

In the short run, the property tax caps have a small but negative effect on overall employment in the state and business sales, decreasing by 0.03 percent (1,640 workers) and 0.14 percent ($1.1 billion), respectively. However, in the long run, employment is expected to increase by 1.6 percent (78,500 workers) and sales by 1.54 percent ($12.7 billion).

Our findings are consistent with other analysis of property tax caps that appear in published research.

This study does have limitations. Among them is our estimate of the timing of impacts. As with any CGE, the adjustment speed is unknown. Other research, and some reported herein, leads us to believe that the timing of these effects may be distributed over one to two years for short run and at least five years for long run. The model isolates the effects of the property tax caps but does not incorporate the impact of changing economic conditions like the recent recession and ongoing recovery.

Also, New Jersey has a very significant fiscal issue related to liabilities not treated in this simulation. Unfunded pension liabilities are roughly equal in magnitude to the entire bonded liability of the state. Consequentially, how these liabilities are resolved has economic consequences, which, though outside this study, hold the potential to influence the simulations presented in this model. For our purposes here, if contributions to unfunded obligations are made directly from tax revenues during the adjustment period of this model, then government expenditures on other activities would be much reduced in the

current period. We note this here only to explain that we have not modeled this unfunded obligation and to draw attention to the potentially different outcome to our simulations if this obligation is retired from current revenues.

Several states have implemented some form of property tax caps, yet comprehensive analysis on the impact of such caps has been limited. We examine the impact of property tax levy growth caps in New Jersey. The results of the CGE simulations show that the caps are expected to have a positive effect on the New Jersey economy in the long run, increasing employment and income.

INTRODUCTION

The purpose of this project is to analyze the effects of the 2.0 percent cap on property tax levy growth implemented in New Jersey beginning January 2011. The analysis will examine the effects of this policy change on economic activity in New Jersey. The analytical framework that we use is a regional computable general equilibrium (CGE) model—the New Jersey CGE Model. We analyze the effects of this policy on economic indicators such as output, household disposable income, and industry sales in various industrial sectors. Our model includes 9 household income groups and 41 industry sectors based on the 3-digit NAICS code.

The property tax caps will increase the disposable income of households (in aggregate) as growth in property taxes is limited. Lower property taxes are also expected to increase capital investment as the cost of capital decreases. This ultimately creates jobs and increases household income and industry sales. At the same time, lower property tax revenue means less government spending. Our model captures each of these effects simultaneously.

CGE MODELS

CGE models are used to examine a variety of policy initiatives. See Partridge and Rickman (1998, 2007) for a survey. A more limited body of literature has used CGE models to analyze the impacts of property tax changes. Waters, Holland, and Weber (1997) examine the impact of Oregon's Measure 5, a property tax limit passed in 1990, and find output and income increase after the limitation is passed, with high income households benefitting more than low income households. They also find state and local government expenditures and revenue decrease substantially. Julia-Wise, Cooke, and Holland (2002) examine the general equilibrium effects of an initiative to reduce property taxes by 50 percent in Idaho and find that the property tax reduction would increase economic activity. Thaiprasert, Faulk and Hicks (2010) use a CGE model to estimate the effects of a tiered property tax cap on economic activity in Indiana. The Indiana study closely parallels the work presented here, though there are substantial differences in policy and expenditure linkages between Indiana and New Jersey.

"The property tax caps will increase the disposable income of households (in aggregate) as growth in property taxes is limited."

THE NEW JERSEY CGE MODEL

The CGE model is based on the Washington-Idaho CGE model by Holland, Stodick, and Devadoss (2004) with further alterations in the government (institutional) block for detailed tax analysis. The structure of the Washington-Idaho model is similar to the standard CGE model constructed by Löfgren (2000, 2002) and Gilbert (2002, 2003). The model can be created using the Social Accounting Matrix (SAM) data from IMPLAN, and run by using GAMS (General Algebraic Modeling System) software with PATH solver. The model is a policy analysis model rather than a forecasting model. It is designed to estimate how production, consumption, prices, and trade in a region would have been different relative to the model's base year if parameters or exogenous variables representing productivity, consumer demand, trade, or taxation had been different (Holland, Stodick and Devadoss 2004).

> "The CGE model explicitly captures the behavior of various agents, the institutional framework, and the market clearing processes."

The CGE model explicitly captures the behavior of various agents (households, firms, government, and rest of the world), the institutional framework (fiscal system and transfer mechanisms), and the market clearing processes (prices and quantities). The model recognizes that an exogenous change that affects any one part of the economy can produce repercussions throughout the system, thus CGE models are preferable to partial equilibrium models for understanding the impact of exogenous shocks and changes in relative prices. This provides an internally consistent representation of the economic structure through the specification of a system of simultaneous equations following the Walrasian general equilibrium system.

The CGE model built for this study comprises the price block, the production and commodity block, the institution block, and the system constraint block. The price block includes specifications for regional-foreign import price, regional-domestic import price, regional-foreign export price, regional-domestic export price, aggregate or composite demand price, aggregate supply or composite supply price, activity price, and value-added price.

The production and commodity block specifies a Leontief/constant elasticity of substitution (CES) production function, factor demand, intermediate input demand, output conversion function, Armington commodity composite supply, import-domestic demand ratio, composite supply for non-imported commodities, output transformation/constant elasticity of transformation (CET) equation, and export-domestic supply ratio. In addition, it includes the output transformation for non-exported commodities, the rest-of-the-U.S. (RUS) and the rest-of-the-world (ROW) export demand function, Armington export composite equation, ROW-RUS export ratio, Armington import composite equation, and ROW-RUS import ratio.

The institutional block comprises equations for factor income, gross household income, net household income, household consumption demand, investment demand, federal government revenue, federal government expenditure, state and local government revenue, state and local government expenditure, and indirect taxes. State and local government revenue is the sum of income taxes from households, household property tax, business property tax, investment income, sales tax, other indirect tax receipts, transfer from federal government, transfer within state and local government, transfer from labor and capital factors, revenue from institutional make, and payments from foreigners. State and local government expenditures include government spending, subsidies, transfer to households, transfer within state and local government,[1] and payments to foreigners.

The final block, system constraints, defines the constraints that are satisfied by the economy as a whole without being considered by its individual agents. The block encompasses the micro constraints that apply to individual markets for factors

1 *Note that the transfer within the state and local government is a transfer of revenue for non-education purchase to education purchase and this causes duplicate revenue and expenditures of $22.1 billion. However, this duplication does not affect the simulation results.*

and commodities and the macro constraints that apply to the balance-of-payments and the saving-investment balance. The factor market equilibrium requires that the sum of the factors used in each sector equals the total endowment. In the commodity market equilibrium, the quantity of a commodity supplied equals the quantity demanded for intermediate input use, household consumption, government consumption and investment. The balance-of-payments equation states that the sum of export earnings, household transfers from foreigners, government transfers from foreigners, and capital inflow is equal to import spending, factor income transfer to foreigners, and institutional transfer to foreigners. Savings include household, government and foreign savings. Investment includes commodity, institutional and foreign investments. Finally, we set the numeraire equal to the exchange rate so that the consumer price index (CPI) and other prices are allowed to adjust. The advantage of fixing the exchange rate is that it allows us to focus more on changes in the CPI and less on various other price changes in the economy.

These modeling details are presented here for technical-minded readers who wish to replicate this work. For those more interested in the policy dimension of this discussion, a more simple explanation of this approach is in order. The constraints on individuals and businesses are discussed above. The constraints of markets from operating in equilibrium are typical of economic modeling of this type. We do not believe markets instantly and perfectly adjust to market equilibrium – we observe unemployment and under-used assets. However, over time, markets for goods and services, commodities and financial instruments adjust to a condition where supply equals demand. That is what we allow for here.

DATA

The model uses the data from the 2009 New Jersey Social Accounting Matrix (SAM) produced by IMPLAN. The original IMPLAN SAM is disaggregated into 440 production or commodity sectors and 21 factor and final demand sectors. For our CGE model, production sectors are aggregated into 41 activities and 41 commodities based on the 3-digit NAICS code. There are two primary factors of production (labor and capital); two indirect business tax sectors (business property tax and other indirect business taxes); 20 final demand sectors (institutions, investment, and trade); nine household sectors based on income levels; three sectors of federal government (military purchases, non-military purchase, and non-military investment); five sectors of state and local governments (household property tax, household income tax, other non-education purchases,

education purchases, and non-education investment); one saving-investment sector (enterprises, gross private fixed investment, and inventory adjustment combined); and two trading sectors of domestic trade (RUS) and foreign trade (ROW).

Because the model is used to analyze state and local government taxes, more emphasis is placed on state and local government sectors. We separate the business property taxes from other indirect business taxes, which are normally aggregated together in a typical regional CGE model that does not focus on tax policy. A production sector (both for activities and commodities) is dedicated for owner-occupied dwellings or imputed rent plus costs of home maintenance in order to observe the imputed rental value of the home. The intermediate input of this sector is the costs of home maintenance. The capital input or property income comes from the imputed rent less the cost of home maintenance. There is no labor input in this sector, and the interest and mortgage payments are not part of the production function for this sector, rather a transfer from households to the saving-investment sector. Because IMPLAN's household property tax data is the gross levy and is only available at the aggregated household level, the share of household property tax (indirect business tax) to owner-occupied dwellings is thus the same for all household groups. However, the share of household property tax to total household expenditures are different among household groups because the level of household expenditures is not the same for every household group. For the renter properties (real estate establishments), they are considered business property and are taxed under business property tax.

The treatment of household income is similar to other mainstream regional CGE models. Household income taxes are separated into the federal household income tax and state and local household income tax.

Sales tax is collected on domestic commodity demand from household consumption but not from the business consumption. This is a close approximation of actual sales tax behavior in New Jersey. Because of the fixed data structure of the SAM available from IMPLAN, the base year household consumption data includes household sales tax payments of $10 billion (sales tax rate is 7 percent), although we cannot pinpoint directly how much is from each sector. Thus, the base year sales tax rate is set as 0 percent in the model and the amount of sales tax collected in the base year cannot be directly calculated by sector. By imposing a certain percent change in sales tax rate as a shock to the model, we multiply that certain percent price wedge with household consumption at a price level and comparing the results with and without the wedge to analyze the effect of change in sales tax rate. With this setting, we are able to select which sectors are taxable and which are exempt according to New Jersey's sales tax structure. This is important because administrative factors influence the incidence of direct sales tax payments by different business sectors. See Appendix Table A1 for a list of taxable and nontaxable (exempt) sectors for the sales tax. The rationale for dividing industries into taxable and nontaxable sector is that consumers react differently to price changes on taxable and nontaxable goods and services. Tax laws have evolved to take advantage of these differences. Taxable goods usually have elastic price elasticity of demand, and consumers tend to substitute or ration when prices increase. By nature, nontaxable goods are necessities (e.g. groceries and prescription drugs) or location-bound services (e.g. education, hospitals, and real estate agents). Consequently, they are usually inelastic and cannot be substituted easily.

CLOSURES

We run the simulation under both short-run and long-run scenarios. Reasons for this will be explained in the Timing and Size of Impacts section. The short-run closure is used to test the short-to-immediate impacts on the economy, while the long-run closure is used to simulate the effects on the economy over time. In the short run, capital supply is fixed, while capital demand and the gross rental rate are allowed to adjust. Because capital is not allowed to enter or leave the economy in the short-run, the quantity of capital demanded by each sector can only be allowed to move from/to other sectors and the total capital demand remains equal to the total capital supply. Labor is set to be mobile and supply is perfectly elastic. Negative employment means there are unemployed workers. Positive employment means either unemployed workers are hired or in-migration occurs. The gross wage rate is allowed to adjust, but the sectoral wage rates remain fixed. We fix both saving and investment and allow CPI to change. The demand level of government spending is allowed to adjust after the government revenue, thus the government savings or government budget balance variable is fixed in the short run. We allow the foreign and RUS savings (investment in the state) to adjust in their respective closures. The exchange rate is therefore fixed and thus becomes a numeraire.

> "The long-run results should be viewed as insights into the general direction of changes in the economy (such as the approximate magnitude of quantity and the price changes in each sector and institution), not as precise numerical results."

In the long run, both capital and labor demand and supply should be variable (Löfgren 2002). The wage rate and rental rate are likely to remain fixed because factor costs should come back to the original equilibrium level in the long run after going through some adjustments. While investment is demanded by firms as they make adjustment over the long run, we allow investment to be driven by savings when it comes from household savings, government budget balance, and trade balance. The demand level of government spending is fixed, but the government budget balance variable is allowed to adjust in the long run from the revenue change. We apply the same treatment on the ROW and RUS closures as in the short run. The exchange rate is also a numeraire in the long run.

The long-run results should be viewed as insights into the general direction of changes in the economy (such as the approximate magnitude of quantity and the price changes in each sector and institution), not as precise numerical results. This model is comparative static, and in the long-run scenario we must set up the model such that the state and local government will have to consume at the base-run level. For the long-run scenario, we cannot simulate the annual increase or decrease in the state and

local government revenue and the accumulated business capital stock. Thus, revenue lost from tax cuts from one source will always be replaced by other sources and the equilibrium will be reached when the state and local government revenue equals its expenditure at the base-run consumption level. The timing for this adjustment until reaching the equilibrium is unknown, but we assume it is at least five years. This is based in part on our estimates of the response of New Jersey's gross regional product (GRP) to previous shocks. We submit annual data on New Jersey's GRP to three statistical tests. Using data from 1963 to 2009, we test the partial correlation of GRP to lags of itself, and find positive, and statistically meaningful partial correlations for five years. We then test whether or not there is a relationship between the government spending on wages (a proxy for tax revenues) and GRP. Two common tests are available: Granger causality and co-integration. In both time series tests, we find evidence of linkages that extend to five years, with limited linkages over longer periods. These tests point to roughly a five year period as an appropriate adjustment period for large fiscal policy changes.

For the short-run scenario, because the saving and investment are fixed, the state and local government has to adjust after the tax cut by reducing its consumption level. Reducing the government consumption while not allowing new investment for businesses usually leads to negative economic activities in the short run.

ELASTICITIES

In their literature review of regional CGE modeling, Partridge and Rickman (1998, 2007) emphasize the greater degrees of openness in regional economies relative to national or international economies. Therefore, the trade elasticities for a regional CGE model should be higher and cover a broader range of goods and services than those found in national or international models. In our model, we set the trade elasticities (Armington and CET) to be higher for the substitution between New Jersey output and imports and output transformation between New Jersey demand and export (2.0) than the import substitution and export transformation between ROW and RUS (1.35).[2] This is to emphasize the greater degrees of openness in regional economies relative to national or international economies. Other studies (such as Julia-Wise, Cooke and Holland 2002) have divided industry sectors into tradeable and nontradeable. While this may be appropriate for national or international CGE models, at the regional level most sectors are tradeable. We do not follow this delineation in the model.

TABLE 1 » ELASTICITIES USED IN THE MODEL

Elasticities	
Elasticity of substitution for production (substitution between labor and capital)	1.00
Elasticity of substitution (Armington) between New Jersey output and imports	2.00
Elasticity of transformation (CET) between in-state demand and exports	2.00
Elasticity of substitution (Armington) between ROW imports and RUS imports	1.35
Elasticity of transformation (CET) between ROW and RUS for exports	1.35
Income elasticity	1.00
Supply elasticity for labor	2.00
Supply elasticity for capital	0.50

As the production function of our model is a CES type, we set the elasticity of substitution between labor and capital to unity to mimic the Cobb-Douglas production function. Unitary income elasticity is also assumed in the demand function. The supply elasticity for labor is set at 2.0 (elastic) while the supply elasticity for capital is set at 0.5 (inelastic) as labor is easier than capital to be substituted. Table 1 summarizes the elasticity assumptions used in the model.

2 *Based on the average U.S. Armington elasticities found in Gallaway, McDaniel and Rivera (2003).*

CGE MODEL SIMULATION PROCEDURES

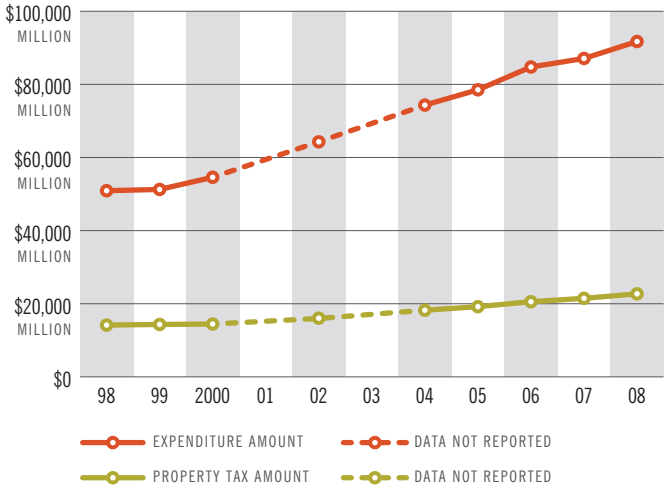
The simulation examines the impact of the property tax levy growth caps of 2.0 percent on the New Jersey economy. To do this, first we obtained the property tax levy of New Jersey from the U.S. Census Bureau and calculated the 10-year average growth of the levy (1998 – 2008). From this data, we found that New Jersey's property tax levy (not adjusted for inflation) has grown on the average of 4.93 percent annually (see Table 2). Next, in order to cap the levy growth from 4.93 percent to 2.0 percent, 2.93 percent of levy growth has to be reduced. That percentage reduction is equal to $636 million reduction in property tax levy (see Table 3). We applied the reduction rate of 2.93 percent to the base-run model.

The data used in the base-run model is for 2009, the latest year the data are available. We use this data to represent New Jersey's 2011 economy. Given the many assumptions that are necessary to model the regional economic system, the precise numerical results are not as important as the insights into the general direction of changes in the economy, the components of the tax system, and the approximate magnitude of the price and quantity effects seen under alternative assumptions. Thus, when discussing the results, we assume the base-run year is 2011.

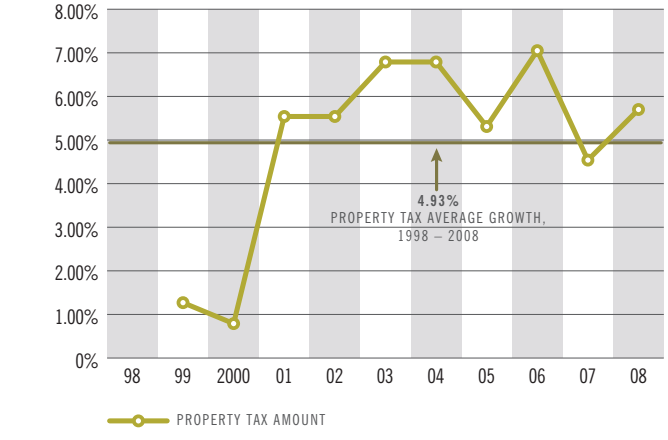
A description of the simulations appears in Table 4.

FIGURE 1 » LEVEL AND GROWTH OF STATE AND LOCAL TAX REVENUES IN NEW JERSEY (NOMINAL VALUES)

A » LEVEL OF STATE AND LOCAL TAX REVENUES



B » GROWTH OF STATE AND LOCAL TAX REVENUES, CHANGE FROM PREVOUS YEAR



Note » For data tables, see Appendix Table B1.
Source » U.S. Census Bureau (various years).

TABLE 3 » TAX RATES AND REDUCTION IN VARIOUS STATE AND LOCAL REVENUE SOURCES USED IN MODEL (CALCULATED FROM NOMINAL VALUES)

	Property Tax	
	Amount	Growth Rate
Cap rate	–	2.00%
Growth rate reduction in the model	–	2.93%
Expected reduction amount	$636,000,000	–
Expected 2011 value	$21,068,000,000	–
Percent of base-run expenditure	–	0.54%

TABLE 4 » SIMULATION DESCRIPTION

	Description
Base Run	New Jersey economy of 2009, representing 2011
Simulation	Homeowner and business property tax levy growth is capped at 2% (reduced from the 10-year average growth of 4.93% to 2%)

THE TIMING AND SIZE OF IMPACTS

With this general equilibrium approach, we analyze the economic response of markets and factors of production to changes in fiscal policy. We are also able to assess the effects over both the short and long run. For our purposes, the short run is the period in which businesses cannot practically alter their capital investment. This clearly varies from industry to industry, but is a period ranging from a few months, to a few years. The long run is when the entire New Jersey economy has made adjustments in capital and labor as well as the types of goods produced. We estimate this to have fully occurred in about five years.

Though outside the scope presented herein, this policy change offers a good study in the difference between long and short-run policy impacts. A decrease in government spending, in the short-run, reduces economic activity as governments hire fewer workers and spend less money on goods and services. However, the concomitant decline in tax collections, which boost incomes of households, are not experienced as quickly. Thus, the expected increase in consumer spending and decline in the cost of home ownership do not immediately affect the economy. Likewise, the decline in the cost of purchasing business facilities and equipment occurs only in the long run. However, this is not because business response is slow, but rather the time requirements for business investment are much longer than for most household consumption decisions.

Our approach is the generally accepted theory used in CGE modeling, which in the short run suggests a fixed capital supply while labor is variable. In the long run, both capital and labor demand and supply are allowed to be variable. Wage rates and rental rates are variable in the short-run, but are likely to remain fixed in the long-run because factor costs should come back to the original equilibrium level in the long run after experiencing a period of adjustment (Löfgren 2002). Savings and investment are fixed in the short run, as businesses need considerable lead time for their investment decisions to materialize into new facilities and equipment. For the long run, we allow investment to be driven by savings, so more investment is allowed as firms have had time to adjust its investment plan.

Because the state of New Jersey cannot effectively run a budget deficit, our analysis always imposes a balanced budget. Both government revenue and expenditures decline in the short run as imposing property tax caps will substantially reduce revenue for some local governments. For the long-run analysis, we permit government revenue and expenditures to balance as the economy adjusts to the new tax rates. Through CGE simulations, we are able to provide some insight into how this change in the state and local fiscal environment affects households, industry sectors, and the overall level of economic activity. We discuss the effects of imposing a property tax levy growth cap in the following pages.

PRESENTATION AND DISCUSSION OF RESULTS

BACKGROUND INFORMATION

A 2.0 percent cap on property tax levy growth was approved July 13, 2010, and implemented January 2011. The current levy growth cap has limited exceptions (capital expenditures and debt service, pension benefits, health benefits, and expenses occurred during a state of emergency) and any additional exceptions must be approved by voters. Previously, a 4.0 percent cap on property tax levy growth had been in place but the numerous allowable exceptions made the cap ineffective.

In the Tax Foundation's 2010 Facts and Figures Handbook, New Jersey has the distinction of having the highest state and local property tax collections per capita among all the U.S. states and the District of Columbia. Figure 2 shows the real (inflation adjusted) property tax levy and annual growth rate since 1998 for jurisdictions levying property taxes in New Jersey. Figure 3 shows the real (inflation adjusted) per capita levy. The real total levy increased from 17.1 billion in 1998 to 24.0 billion in 2009, a 40.2 percent increase. The real total levy per capita increased from 1,609.73 in 1998 to 2,761.76 in 2009, a 71.6 percent increase.

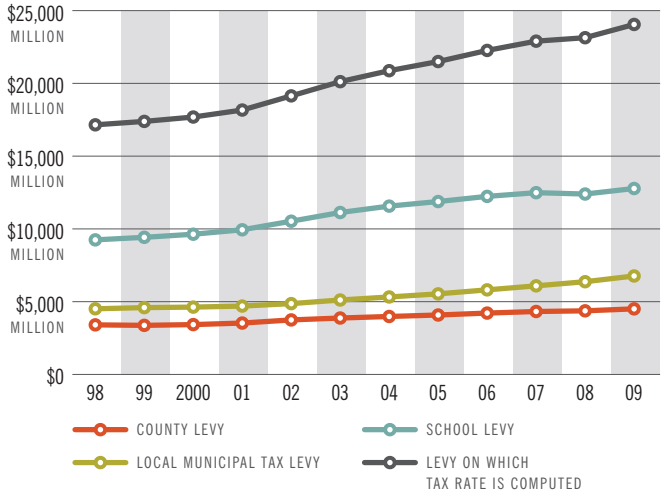
AGGREGATE EFFECTS

An advantage of a general equilibrium model is capturing the changes in economic activity resulting from a policy change – in this case the property tax levy caps. Among others, demand for industry output may change; employment may shift among industry sectors; wage and rental rates may adjust. As a result, income taxes and indirect business taxes are affected even though the policy change does not directly change these taxes. Changes in capital and labor supply and demand resulting from the policy change do impact these taxes. In the short run, there are small decreases in state and local income tax revenue and revenue from indirect business taxes in addition to a small decrease in federal income tax revenue. In the long run, the caps have a positive effect on income and indirect business tax revenue as high as 1.6 percent (Table 5).

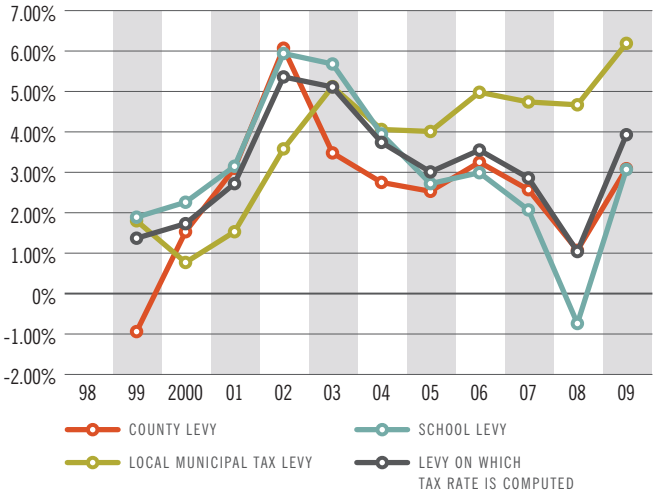
Table 6 illustrates the aggregate economic effects of the property tax caps. In the short run, the initial effect of the property tax caps is relatively small, but negative, on gross regional product (GRP), the dollar value of all goods and services produced

FIGURE 2 » AGGREGATE PROPERTY TAX LEVIES (ADJUSTED FOR INFLATION) AND ANNUAL GROWTH RATE, 1998 – 2009

A » AGGREGATED TOTALS FOR LEVIES (2009 INFLATION ADJUSTED)



B » ANNUAL GROWTH OF (AGGREGATED) LEVIES

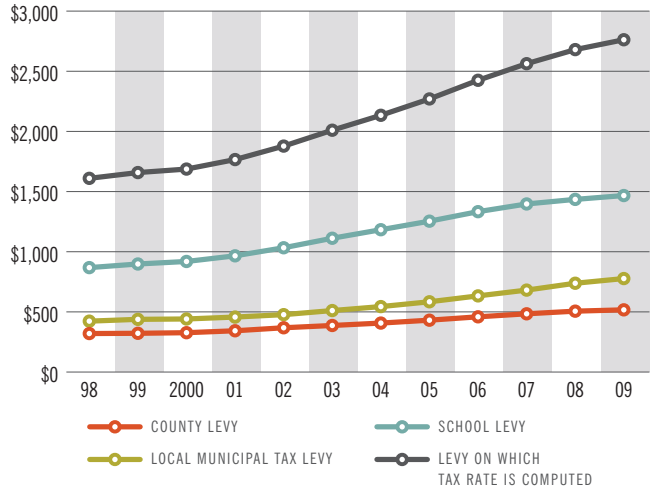


Source » Author's calculations using data from New Jersey Department of Community Affairs, Division of Local Government Services, http://www.state.nj.us/dca/lgs/taxes/taxmenu.shtml.

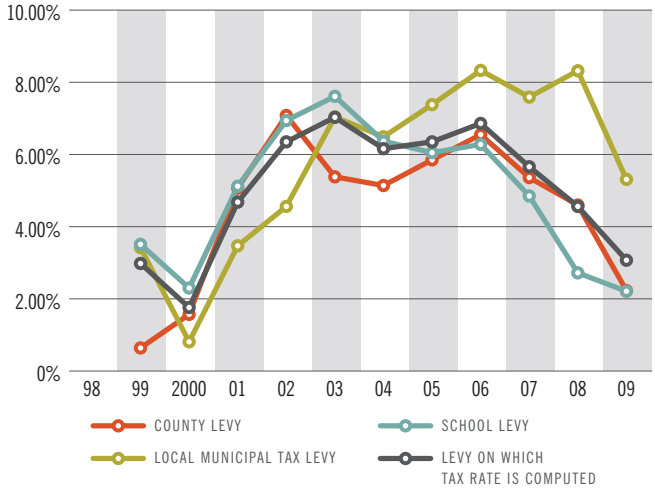
Note » All dollar amounts are adjusted for inflation to 2009 purchasing power using the CPI. For data tables, see Appendix Table B2.

FIGURE 3 » PER CAPITA PROPERTY TAX LEVIES AND ANNUAL GROWTH RATE, 1998 – 2009

A » PER CAPITA TOTALS FOR LEVIES (2009 INFLATION ADJUSTED)



B » PER CAPITA ANNUAL GROWTH OF LEVIES



Source » Author's calculations using property tax data from the New Jersey Department of Community Affairs, Division of Local Government Services, http://www.state.nj.us/dca/lgs/taxes/taxmenu.shtml. Population data from the U.S. Bureau of the Census.

Note » All dollar amounts are adjusted for inflation to 2009 purchasing power using the CPI. For data tables, see Appendix Table B3.

TABLE 5 » FISCAL AND AGGREGATE EFFECTS

Variable	Base Run	Short-Run Change	Long-Run Change
State and local governments' revenue	$118,153 M	$-659.07 M -0.56%	– –
State and local governments' expenditure	$118,109 M	$-659.06 M -0.56%	– –
State and local governments' revenue from household property tax	$5,391 M	$-160.60 M -2.98%	$-106.29 M -1.97%
State and local governments' revenue from business property tax	$16,313 M	$-484.91 M -2.97%	$-218.26 M -1.34%
State and local governments' revenue from household income tax	$12,481 M	$-6.52 M -0.05%	$127.52 M 1.02%
State and local governments' revenue from sales tax	$10,077 M	$1.44 M 0.01 %	$100.69 M 1.00%
State and local governments' revenue from other indirect business taxes	$9,679 M	$-4.24 M -0.04%	$158.74 M 1.64%
Federal government's revenue from household income tax	$49,437 M	$-25.75 M -0.05%	$521.38 M 1.05%

TABLE 6 » OVERALL ECONOMIC EFFECTS

Variable	Base Run	Short-Run Change	Long-Run Change
Gross regional product	$475,064 M	$-765 M -0.16%	$7,194 M 1.51%
Value of output (sales)	$823,439 M sales	$-1,145 M sales -0.14%	$12,690 M sales 1.54%
Return to capital	$179,702 M	$43 M 0.02%	$3,008 M 1.67%
Return to labor	$264,853 M	$-317 M -0.12%	$4,172 M 1.58%
Employment (persons)	4,918,922 persons	-1,640 persons -0.03%	78,537 persons 1.60%
Net household income	$356,025 M	$-55 M -0.02%	$3,560 M 1.00%
Private business investment demand	$42,342 M	$0 0%	$3,123 M 7.38%

in New Jersey. GRP decreases by $765 million (0.16 percent). However, the long-run results show that the caps have a positive effect on New Jersey's economy. GRP increases by 1.5 percent for several reasons. First, there is an increase in demand for goods and services because households have more disposable income when property taxes are reduced. Likewise, investment increases as firms pay lower property taxes. Aggregate production output (sales) decreases in the short run (0.14 percent) but increases in the long run (1.5 percent).

Returns to capital increase slightly in the short run (0.02 percent) but returns to labor decline in the short run (0.12 percent). However, both returns to capital and labor increase in the long run (1.67 percent for capital and 1.58 percent for labor) as businesses need more of these factors for the production. These returns to capital are either return on investment to owners of capital or total compensation for workers. Employment decreases by 1,640 persons in the short run, but increases as much as 78,500 persons, or 1.6 percent, in the long run.

The short run sees a small decrease in net household income (0.02 percent), but due to the property tax caps, the long run has a 1.0 percent increase. Net household income is higher in the long run because households earn more income due to the increase in total compensation.

EFFECT ON SALES AND PROPERTY TAXES PAID BY HOUSEHOLDS

With the property tax levy growth caps, each income group's property tax payments decrease, though it is a relatively small decrease in magnitude. The Bureau of Economic Analysis's Consumer Expenditure Survey (CES) determines the income groupings. Table 7 shows the average effects for the short run and long run, assuming the numbers of households and owner-occupied households are constant over the long-run period. The lowest and highest income households have the largest average decrease in property tax payments. Average property tax savings is expected to increase with income because consumption, sales taxes paid, house values, and property tax payments are likely to also increase with income. The higher relative savings in the lowest income group (income less than $10,000) likely results from a large number of retirees in owner-occupied dwellings. Long-run property tax collections are lower (relative to the short run) because the home ownership rate grows over time, increasing the property tax base.

Relatively small changes in sales taxes are associated with the property tax caps. The short run has a negligible impact on sales tax payments. However, these payments increase for all household groups in the long run. The increase in sales tax paid results from two factors. First, lower property taxes allow households to have more disposable income to spend, some of which will be spent on sales-taxable items. Second, the new tax regime (lower property taxes) will increase economic activity, part of which is sales-taxable items. These factors ultimately increase demand for labor. The increased income created by new employment will be spent, in part, on sales-taxable items.

TABLE 7 » AVERAGE ADDITIONAL HOUSEHOLD SALES TAX AND PROPERTY TAX PAID BY EACH HOUSEHOLD GROUP

	Average Change in Sales Taxes per Household* ($)		Average Change in Property Tax Paid per Owner-Occupied Household** ($)	
Household Income Group	**Short Run**	**Long Run**	**Short Run**	**Long Run**
Income less than $10,000	0.26	2.42	-50.11	-47.1
$10,000 to $14,999	0.10	3.42	-27.90	-25.6
$15,000 to $24,999	-0.02	8.22	-38.21	-32.0
$25,000 to $34,999	-0.28	14.54	-46.24	-35.4
$35,000 to $49,999	-0.63	22.57	-48.62	-34.3
$50,000 to $74,999	-0.79	30.53	-65.26	-43.7
$75,000 to $99,999	-0.94	35.76	-64.23	-41.7
$100,000 to $149,999	-0.78	37.45	-68.49	-43.1
$150,000 or more	0.12	69.75	-128.06	-80.6
Total or Average	*-0.46*	*31.94*	*-73.03*	*48.3*

* Additional sales tax is paid by all households in each income group, not only owner-occupied households.

** Estimated number of owner-occupied households from 2000 Census Public Use Microdata Sample.

TABLE 8 » EFFECT ON THE DISTRIBUTION OF HOUSEHOLD INCOME

	Average Change in Net HH Income* ($ per Household)		Average Change in Net HH Income (% of Labor Income)
Household Income Group	**Short Run**	**Long Run**	**Long Run**
Income less than $10,000	10	91	2.24
$10,000 to $14,999	3	121	1.84
$15,000 to $24,999	-1	272	1.54
$25,000 to $34,999	-10	499	1.48
$35,000 to $49,999	-23	783	1.49
$50,000 to $74,999	-29	1,097	1.38
$75,000 to $99,999	-35	1,284	1.36
$100,000 to $149,999	-29	1,342	1.35
$150,000 or more	2	2,435	1.80
Average	*-17*	*1,129*	*1.50*

* Gross household income less household income taxes, household property taxes, sales taxes, all other taxes, savings, inter-household transfers and overseas transfers.

TABLE 9 » EQUIVALENT VARIATION UNDER EACH SIMULATION ($ PER HOUSEHOLD*)

	Simulation	
Household Income Group	**Short Run**	**Long Run**
Income less than $10,000	9	91
$10,000 to $14,999	3	121
$15,000 to $24,999	-2	272
$25,000 to $34,999	-11	499
$35,000 to $49,999	-24	783
$50,000 to $74,999	-31	1,097
$75,000 to $99,999	-37	1,284
$100,000 to $149,999	-31	1,342
$150,000 or more	-1	2,435
Average	*-19*	*1,129*

* This is the average EV for all households in each income group, not only owner-occupied households.

EFFECT ON HOUSEHOLD INCOME

We expect the property tax caps to have a positive effect on household income. The effect of the cap on income stems from two sources. First, the caps lower property tax payments for some households, thereby increasing disposable income. The caps may not lower property tax payments for all households because the growth in property tax payments of some households may be below the cap. Second, the property tax cap causes changes in economic activity that affects employment, sales and income, which ultimately leads to higher incomes for some households.

Table 8 shows the effect of the property tax levy growth caps on household income groups. The short-run effects are relatively small, ranging from an average decrease of $35 to an average increase of $10. Households with annual income lower than $15,000 experience a small increase in average annual income while households with higher incomes experience a negligible decrease in average income.

In the long run, net household income is higher for all income groups due to increased economic activity resulting from the property tax caps and increased returns to labor. Higher income households benefit more in terms of the magnitude of the increase. Home ownership rates and house values are likely to be higher for higher income groups, causing property tax savings to be higher for these groups. As a percentage of labor income, the benefit is roughly proportional over the middle range of the income distribution. When measured as a percent or labor income, this indicates the long-run increase in household income resulting from the caps is approximately equal across most income groups.

EFFECT ON HOUSEHOLD WELFARE

Equivalent variation (EV) is a measure of the welfare effects or benefits of a policy change. The EV is widely used in economic evaluation of policy and can be interpreted as the payment a household would require to return to the original tax regime, in this case, no property tax levy growth cap. A positive EV indicates households would have to be paid to return to the original regime because they were better off under the new regime (the 2.0 percent cap on property tax levy growth). A negative EV indicates that households would be willing to pay to return to the original tax regime because they are worse off under the new regime.

With property tax caps, households with income less than $15,000 are better off in both the short and long run (Table 9). Households with $15,000 or more in annual income are worse off in the short run. Again, this is likely due to idiosyncrasies in the adjustment period in which a tax change leads to immediate changes in consumer expenditure patterns, resulting in more consumption of goods by New Jersey consumers. In the long run, however, incomes respond and make all household groups better off.

TABLE 10 » TOTAL BUSINESS PROPERTY TAX PAID BY SECTOR

Industry	Base Run	Simulation		Industry	Base Run	Simulation	
	Total Business Property Tax Paid by Sectors	Short Run (% Change)	Long Run (% Change)		Total Business Property Tax Paid by Sectors	Short Run (% Change)	Long Run (% Change)
Crops	$6.79 million	-3.00%	-1.85%	Furniture	$3.73 million	-2.99%	-0.69%
Animal#	$1.43 million	-2.99%	-1.90%	Miscellaneous manufacturing	$22.87 million	-3.06%	-1.00%
Miscellaneous agriculture#	$2.62 million	-3.02%	-1.66%	Wholesale trade*#	$4,106.73 million	-3.02%	-0.89%
Mining#	$14.18 million	-3.10%	-1.35%	Retail trade#	$3,565.39 million	-2.95%	-1.63%
Utility#	$499.22 million	-2.83%	-1.48%	Transportation#	$445.77 million	-2.99%	-1.33%
Construction*	$125.69 million	-3.16%	1.74%	Information#	$1,018.65 million	-3.05%	-1.34%
Food*	$144.97 million	-2.97%	-1.97%	Finance*#	$1,190.27 million	-2.98%	-1.81%
Textile and leather*	$18.80 million	-2.96%	-1.83%	Real estate*#	$2,044.56 million	-2.98%	-1.72%
Wood	$1.69 million	-3.14%	-0.02%	–	–	–	–
Paper	$31.75 million	-3.09%	-1.68%	Other rental and leasing#	$427.12 million	-3.06%	-1.31%
Printing	$13.49 million	-3.09%	-1.64%	Professional*#	$662.65 million	-3.05%	-0.60%
Petroleum and coal	$51.47 million	-3.15%	-1.46%	Management*	$118.29 million	-3.04%	-1.42%
Chemical	$180.54 million	-3.08%	-1.63%	Administration*	$216.73 million	-3.09%	-1.57%
Plastics and rubber	$21.65 million	-3.11%	-1.29%	Education*	$33.31 million	-2.98%	-1.70%
Nonmetallic mineral	$13.20 million	-3.12%	-0.03%	Health	$257.29 million	-2.95%	-1.89%
Primary metal	$15.20 million	-3.08%	0.18%	Art and entertainment#	$183.28 million	-2.93%	-1.78%
Fabricated metal	$18.94 million	-3.09%	-0.31%	Hotel#	$259.31 million	-2.82%	-1.77%
Machinery*	$17.57 million	-3.02%	1.48%	Restaurant#	$468.67 million	-2.98%	-1.88%
Computer and electronics	$62.65 million	-2.91%	-0.19%	Other services#	$472.28 million	-2.99%	-1.82%
Electrical appliance	$10.45 million	-3.04%	-0.51%	–	–	–	–
Transportation equipment	$6.69 million	-2.99%	-1.94%	*Total*	*$16,313.29*	*-2.97%*	*-1.34%*

* Non sales-taxable sectors.

Sectors paying high property taxes in the base run (more than 1.0 percent of its total output).

Note » See Appendix Table A2 for industry definitions.

EFFECTS ON BUSINESS PROPERTY TAX PAYMENTS

In the short run, all industry sectors experience a decrease in business property tax payments (Table 10). The industries that benefit the most in terms of the actual dollar decrease in property taxes are wholesale trade, retail trade, real estate, finance and information. Most sectors experience decreases of around 3.0 percent. In the long run, the decrease in property taxes paid is lower, though some sectors (construction, primary metals and machinery) pay more business property tax. This is consistent with increases in economic activity.

TABLE 11 » VALUE OF OUTPUT (NEW JERSEY SALES PLUS DOMESTIC AND FOREIGN EXPORTS)

Industry	Base Run	Simulation		Industry	Base Run	Simulation	
	Value of Output	Short Run (% Change)	Long Run (% Change)		Value of Output	Short Run (% Change)	Long Run (% Change)
Crops	$916 million	-0.06	1.10	Furniture	$1,198 million	-0.07	2.24
Animal#	$140 million	-0.05	1.00	Miscellaneous manufacturing	$6,942 million	-0.13	1.96
Miscellaneous agriculture#	$301 million	-0.08	1.11	Wholesale trade*#	$53,698 million	-0.09	2.10
Mining#	$841 million	-0.18	1.64	Retail trade#	$37,431 million	-0.02	1.34
Utility#	$15,377 million	-0.11	1.19	Transportation#	$26,766 million	-0.09	1.58
Construction*	$32,748 million	-0.23	4.81	Information#	$35,871 million	-0.12	1.64
Food*	$16,262 million	-0.04	0.98	Finance*#	$72,785 million	-0.05	1.15
Textile and leather*	$2,264 million	-0.03	1.10	Real estate*#	$33,741 million	-0.07	1.22
Wood	$505 million	-0.20	2.85	Owner occupied dwellings*	$40,673 million	-0.01	1.03
Paper	$6,801 million	-0.17	1.29	Other rental and leasing#	$17,554 million	-0.12	1.61
Printing	$2,558 million	-0.16	1.32	Professional*#	$68,867 million	-0.13	2.33
Petroleum and coal	$20,669 million	-0.21	1.42	Management*	$19,664 million	-0.11	1.56
Chemical	$69,491 million	-0.16	1.33	Administration*	$23,001 million	-0.16	1.37
Plastics and rubber	$4,604 million	-0.18	1.64	Education*	$9,354 million	-0.04	0.96
Nonmetallic mineral	$2,693 million	-0.19	2.94	Health	$63,319 million	-0.02	0.99
Primary metal	$3,930 million	-0.14	2.86	Art and entertainment#	$6,392 million	-0.04	1.11
Fabricated metal	$5,851 million	-0.16	2.59	Hotel#	$5,353 million	0.12	1.19
Machinery*	$4,766 million	-0.10	4.36	Restaurant#	$15,523 million	-0.05	1.08
Computer and electronics	$11,046 million	0.02	2.75	Other services#	$17,531 million	-0.06	1.14
Electrical appliance	$2,339 million	-0.11	2.53	Government and special*	$61,387 million	-0.71	0.24
Transportation equipment	$2,288 million	-0.05	1.17	*Total*	$823,439 million	-0.14	1.54

* Non sales-taxable sectors.

Sectors paying high property taxes in the base run (more than 1.0 percent of its total output).

Note » See Appendix Table A2 for industry definitions.

EFFECTS ON OUTPUT

Table 11 shows the effect of property tax caps on the value of output, i.e. sales for various industries. The value of output represents both the supply side and the demand side. On the supply side, this includes intermediate inputs plus value added, meaning returns to labor and capital or regional production. On the demand side, this includes regional sales within New Jersey plus exports sales outside of New Jersey. In the short run, the overall effect of implementing property tax caps is small, though negative. Overall output (sales) decreases 0.14 percent with the caps. In percentage terms, the short run decreases in sales are relatively small—less than a quarter of a percent point of the value of sales for most industries. The computer and electronic industry and the hotel industry have positive growth in the short run.

In the long run, the effect is substantially larger and positive (1.54 percent overall) with all industries showing an increase in sales. Construction, certain manufacturing industries, wholesale trade and professional services benefit the most.

CONCLUSIONS AND LIMITATIONS

CONCLUSIONS

In 2011, a 2.0 percent property tax levy growth cap was implemented in New Jersey. With this cap, the annual increase in the property tax levy cannot be more than 2.0 percent with limited exceptions. The purpose of this study is to examine the economic effects of this cap.

In the short run, we find a relatively small effect on aggregate fiscal and economic measures. The value of output produced in the state, gross regional product (GRP), decreases by 0.16 percent over the short run with property tax caps. However, the long-run effects, assumed to be at least five years, are strongly positive, with these changes in tax and spending policies causing GRP to increase by 1.5 percent.

The property tax levy growth caps have a relatively inconsequential effect on household income in the short run, yet a larger effect in the long run. An average change in income is around $1,129, though higher income households experience larger gains.

With the imposition of property tax levy growth caps, aggregate household property taxes decreases by about 3 percent (about $160 million) in the short run and almost 2 percent ($106 million) in the long run. The effect on the average household is quite small, averaging less than $100 per household in both the long and short run. State and local government revenue from business property taxes decreases by approximately $218 million in the long run. Most business sectors experience around a 3 percent reduction in business property taxes paid in the short run and 1.5 to 2.0 percent decrease in the long run. Long run decreases are smaller due to increases in economic activity, which puts upward pressure on property values and increases the home ownership rate.

In the short run, the property tax caps have a small but negative effect on business sales and overall employment in the state, decreasing by 0.14 percent ($1.1 billion) and 0.03 percent (1,640 workers), respectively. However, in the long run, sales are expected to increase by 1.54 percent ($12.7 billion) and employment by 1.6 percent (78,500 workers).

LIMITATIONS

While this study offers a useful tool and substantial detail in its simulation results, we have a few concerns. These include the timing of impacts. As with any CGE, the adjustment speed is unknown. In a policy setting the speed of adjustment is critical for states wrestling with revenue changes resulting from changes to property and sales taxes. The results of this model show estimates of the magnitude of the impact from implementing property tax caps. The simulation results presented here were constructed under both a short and long-run time frame. As such, the timing of these effects may be distributed over one to two years for the short run and five years for the long run. The model isolates the effects of the property tax caps but does not incorporate the impact of changing economic conditions like the recent recession and ongoing recovery.

Also, New Jersey has a very significant fiscal issue related to liabilities not treated in this simulation. Unfunded pension liabilities are roughly equal in magnitude to the entire bonded liability of the state. Consequentially, how these liabilities are resolved has economic consequences, which though outside this study hold the potential to influence the simulations presented in this model. Any government expense, whether funded through annual revenues or bond obligations, represents economic

activity in the current period. Obligated payback instruments, such as bonds, spread payment for a government activity over a broad period. This is common with items such as infrastructure investment, for which several generations of New Jersey residents may benefit. Unfunded obligations present particular difficulties, because they represent a promise to pay, with its concomitant short-term effect, but they defer the expense to a later period. As a consequence, the benefits of unfunded obligations have already been realized, while their costs have not. Whether these liabilities are reduced by bargaining or statute or are paid off by employee contributions or tax revenues, any mechanism to fund these liabilities has economic effects. For our purposes here, if contributions to unfunded obligations are made directly from tax revenues during the adjustment period of this model, then government expenditures would be much reduced in the current period. We note this here only to explain that we have not modeled this unfunded obligation and to draw attention to the potentially different outcome to our simulations if this obligation is retired from current revenues.

Several states have implemented some form of property tax caps, yet comprehensive analysis on the impact of such caps has been limited. We examine the impact of property tax levy growth caps in New Jersey. The results of the CGE simulations show that the caps are expected to have a positive effect on the New Jersey economy in the long run, increasing both employment and income.

“The results of the CGE simulations show that the [property tax levy] caps are expected to have a positive effect on the New Jersey economy in the long run, increasing both employment and income.”

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APPENDIX A » REFERENCE TABLES

TABLE A1 » LIST OF SALES-TAXABLE AND NON SALES-TAXABLE NAICS SECTORS

Sales-Taxable Sectors (28 Total)	Non Sales-Taxable Sectors (13 Total)
Crops	Construction
Animal production	Food
Miscellaneous agriculture	Textile and leather
Mining	Machinery
Utility	Wholesale trade
Wood	Finance
Paper	Real estate
Printing	Owner occupied dwellings
Petroleum and coal	Professional
Chemical	Management
Plastics and rubber	Administration
Nonmetallic mineral	Education
Primary metal	Government and special sectors
Fabricated metal	
Computer and electronics	
Electrical appliance	
Transportation equipment	
Furniture	
Miscellaneous manufacturing	
Retail trade	
Transportation	
Information	
Other rental and leasing	
Health	
Art, entertainment and recreation	
Hotel	
Restaurant	
Other services	

TABLE A2 » LIST OF NAICS SECTORS

Label	Details	Label	Details
Crops	Crop production	Transportation#	Transportation and warehousing
Animal#	Animal production	Information#	Information
Miscellaneous agriculture#	Logging, forestry, fishing, hunting, trapping, and agricultural support	Finance*#	Finance and insurance
Mining#	Mining and quarrying	Real estate*#	Real estate
Utility#	Utilities	Owner-occupied dwellings*	Owner-occupied dwellings
Construction*	Construction	Other rental and leasing#	Other rental and leasing
Food*	Processed food	Professional*#	Professional scientific and technical services
Textile and leather*	Textile and leather product manufacturing	Management*	Management of companies and enterprises
Wood	Wood product manufacturing	Administration*	Administrative and support, and waste management and remediation
Paper	Paper manufacturing	Education*	Educational services
Printing	Printing and related support activities	Health	Health care and social assistance
Petroleum and coal	Petroleum and coal product manufacturing	Art and entertainment#	Art, entertainment, and recreation
Chemical	Chemical manufacturing	Hotel#	Hotel and accommodation
Plastics and rubber	Plastics and rubber product manufacturing	Restaurant#	Restaurants
Nonmetallic mineral	Nonmetallic mineral product manufacturing	Other services#	Other services
Primary metal	Primary metal manufacturing	Government and special*	Public administration and special sectors
Fabricated metal	Fabricated metal product manufacturing		
Machinery*	Machinery manufacturing		
Computer and electronics	Computer electronic electrical equipment manufacturing		
Electrical appliance	Electrical equipment appliance and component manufacturing		
Transportation equipment	Transportation equipment manufacturing		
Furniture	Furniture and related product manufacturing		
Misc manufacturing	Miscellaneous manufacturing		
Wholesale trade *#	Wholesale trade		
Retail trade#	Retail trade		

* Non sales-taxable sectors.

Sectors paying high property taxes in the base run (more than 1.0 percent of its total output).

APPENDIX B » DATA TABLES FOR GRAPHS

TABLE B1 » LEVEL AND GROWTH OF STATE AND LOCAL TAX REVENUES, NEW JERSEY (NOMINAL VALUES)

Year	Property Tax		Expenditure	
	Amount	Growth Rate	Amount	Growth Rate
1998	$14,156 million	–	$50,916 million	–
1999	$14,336 million	1.27%	$51,265 million	0.69%
2000	$14,449 million	0.79%	$54,590 million	6.49%
2001	Data not reported	5.54%	Data not reported	8.88%
2002	$16,050 million	5.54%	$64,289 million	8.88%
2003	Data not reported	6.79%	Data not reported	7.81%
2004	$18,229 million	6.79%	$74,336 million	7.81%
2005	$19,197 million	5.31%	$78,522 million	5.63%
2006	$20,549 million	7.05%	$84,755 million	7.94%
2007	$21,483 million	4.54%	$87,088 million	2.75%
2008	$22,708 million	5.70%	$91,729 million	5.33%
Average Growth, 1998-2008	–	4.93%	–	6.22%
Data from IMPLAN (2009)	$21,704 million	–	$118,109 million	–

Source » U.S. Census Bureau (various years).

TABLE B2 » NEW JERSEY AGGREGATE PROPERTY TAX LEVIES (ADJUSTED FOR INFLATION) AND ANNUAL GROWTH RATE, 1998 – 2009

Year	County Levy		School Levy		Local Municipal Tax Levy		Levy on Which Tax Rate Is Computed	
	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth
1998	$3,405,505,552	–	$9,247,218,653	–	$4,510,571,429	–	$17,152,032,241	–
1999	$3,373,492,934	-0.94%	$9,421,599,156	1.89%	$4,591,865,920	1.80%	$17,386,958,010	1.37%
2000	$3,425,155,953	1.53%	$9,634,678,142	2.26%	$4,627,073,028	0.77%	$17,686,907,123	1.73%
2001	$3,531,437,856	3.10%	$9,938,630,571	3.15%	$4,698,064,706	1.53%	$18,168,133,132	2.72%
2002	$3,745,902,633	6.07%	$10,528,884,095	5.94%	$4,866,287,269	3.58%	$19,141,073,997	5.36%
2003	$3,876,398,817	3.48%	$11,126,843,967	5.68%	$5,115,372,181	5.12%	$20,118,614,965	5.11%
2004	$3,982,897,893	2.75%	$11,565,852,997	3.95%	$5,323,133,879	4.06%	$20,871,884,768	3.74%
2005	$4,083,562,488	2.53%	$11,879,997,189	2.72%	$5,536,510,586	4.01%	$21,500,070,263	3.01%
2006	$4,216,452,800	3.25%	$12,235,176,797	2.99%	$5,812,033,303	4.98%	$22,263,662,901	3.55%
2007	$4,324,723,755	2.57%	$12,488,630,324	2.07%	$6,087,523,066	4.74%	$22,900,877,146	2.86%
2008	$4,371,017,920	1.07%	$12,395,684,128	-0.74%	$6,371,761,760	4.67%	$23,138,463,808	1.04%
2009	$4,506,063,114	3.09%	$12,776,364,439	3.07%	$6,766,215,854	6.19%	$24,048,643,407	3.93%

Source » Author's calculations using data from New Jersey Department of Community Affairs, Division of Local Government Services, http://www.state.nj.us/dca/lgs/taxes/taxmenu.shtml.

Note » All dollar amounts are adjusted for inflation to 2009 purchasing power using the CPI.

TABLE B3 » NEW JERSEY PER CAPITA PROPERTY TAX LEVIES AND ANNUAL GROWTH RATE, 1998 – 2009

Year	County Levy		School Levy		Local Municipal Tax Levy		Levy on Which Tax Rate Is Computed	
	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth	Total Amount (2009 Inflation Adjusted)	Annual Growth
1999	$321.65	0.64%	$898.30	3.51%	$437.81	3.42%	$1,657.76	2.98%
2000	$326.70	1.57%	$918.97	2.30%	$441.34	0.81%	$1,687.01	1.76%
2001	$343.26	5.07%	$966.04	5.12%	$456.65	3.47%	$1,765.95	4.68%
2002	$367.55	7.08%	$1,033.09	6.94%	$477.48	4.56%	$1,878.12	6.35%
2003	$387.31	5.38%	$1,111.73	7.61%	$511.10	7.04%	$2,010.14	7.03%
2004	$407.23	5.14%	$1,182.56	6.37%	$544.27	6.49%	$2,134.06	6.16%
2005	$431.06	5.85%	$1,254.06	6.05%	$584.44	7.38%	$2,269.56	6.35%
2006	$459.31	6.55%	$1,332.82	6.28%	$633.13	8.33%	$2,425.26	6.86%
2007	$483.94	5.36%	$1,397.48	4.85%	$681.20	7.59%	$2,562.62	5.66%
2008	$506.18	4.60%	$1,435.47	2.72%	$737.87	8.32%	$2,679.52	4.56%
2009	$517.48	2.23%	$1,467.24	2.21%	$777.03	5.31%	$2,761.76	3.07%

Source » Author's calculations using property tax data from the New Jersey Department of Community Affairs, Division of Local Government Services, http://www.state.nj.us/dca/lgs/taxes/taxmenu.shtml. Population data from the U.S. Bureau of the Census.

Note » All dollar amounts are adjusted for inflation to 2009 purchasing power using the CPI.

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