NEW YORK
AND THE GREAT DEPRESSION
By
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Abstract

New York and the Great Depression

New York State historical facts including largely, government policies and actions, are presented from just before the Great Depression through the 1930s. This time period contains the terms of Governors Smith, Roosevelt, and Lehman. Special attention is paid to taxes of the time, especially the implementation of the gasoline tax. The repeal of Prohibition and the consequential taxes on alcohol, as well as school funding in the State of New York, are also discussed. State and federal revenue statistics have been gathered, and differences between these reports are noted. The statistics are then analyzed, extracting trends in receipts over the decade. Finally, a regression using the data is conducted for 13 states during the 1930s, to determine several effects on state revenue.
The state of New York was largely affected by the Great Depression, as was the rest of the United States. Some areas were hit harder than others, and some saw different effects than the rest of the nation. This was a time when New York, and many other states, would implement new taxes, including alcohol taxes after the repeal of Prohibition, and begin job and welfare programs. President Franklin Delano Roosevelt was the Governor of New York at the beginning of the Great Depression and learned much during his time in New York. His successor, Governor Lehman, extended many of Roosevelt’s state plans, and modeled new ideas after Roosevelt’s national New Deal. New York schools also developed during this time of hardship, and led the way for our current school systems. Before the Great Depression, government intervention was uncommon, relying on markets to correct themselves. However, government action has become the norm in financial crises, which has increasing weight at the time of this paper.

The Great Depression in New York and the Nation

During the Great Depression the income tax generated much less revenue with 25% of the population out of work by 1933, and another 25%, affected by wage and hour cuts (Wilkison). Counting only nonfarm workers, 37% of the nation was unemployed (Smiley 2008). Between 1929 and 1933 one out of every four farms went into foreclosure, and there was an average of 100,000 jobs disappearing every week (Owen IV, et al.).

The Great Depression had immense impacts on the United States economy as a whole. Table 1 shows sharp declines in the number of banks, interest rates, stock trading and value, incomes, and savings.
Table 1
Effects of the Great Depression

<table>
<thead>
<tr>
<th></th>
<th>1929</th>
<th>1933</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks in operation</td>
<td>25,568</td>
<td>14,771</td>
<td>-42.23</td>
</tr>
<tr>
<td>Prime interest rate</td>
<td>5.03%</td>
<td>0.63%</td>
<td>-4.4</td>
</tr>
<tr>
<td>Volume of stocks sold (NYSE)</td>
<td>1.1 B</td>
<td>0.65 B</td>
<td>-40.91</td>
</tr>
<tr>
<td>Privately earned income</td>
<td>$45.5B</td>
<td>$23.9B</td>
<td>-47.47</td>
</tr>
<tr>
<td>Personal and corporate savings</td>
<td>$15.3B</td>
<td>$2.3B</td>
<td>-84.97</td>
</tr>
</tbody>
</table>

Source: Wilkison (n.d.)

It is hard to find measures of economic activity that did not decline between 1929 and 1933.

Like the rest of the nation, New York experienced hard times during the Great Depression. Future president Franklin Delano Roosevelt was the Governor of New York at the opening of the Great Depression in 1929. As governor, he had a simple tax policy, make cuts broad, and increases narrow. When the times were good, he reduced income and property taxes (Thorndike 2003). However, as the Stock Market crashed on October 29, 1929, he recognized the economy turning. New York State tax revenues took a major hit, largely from a decline in the revenue from income and property taxes.

“According to Beito, ‘throughout the 1920’s, the general property tax accounted for over 90 percent of taxes levied by all cities over 30,000 in population,’” (qtd. in Thornton and Weise 2001, 95-105). Cities derived the bulk of their revenue from property taxes. Most often, the central business districts paid a higher and disproportionate share. One reason was assessed values, the basis on which taxes were collected. “The ratio of assessed value to actual value was much higher in the central business district than in other parts of the city, sometimes twice or even three times as high.” This could sometimes be attributed to speculative value, the value if someone was to develop the land for a department store, hotel, or office building. “According to a 1941 study, New York was able to stay under its debt limit only by assessing Manhattan real estate on the basis of ‘fictitious’ … values.” If the property had been assessed closer to real
values on the basis of earnings, New York would have exceeded its debt limit and been ‘legally bankrupt’ (Smith 2011).

Faced with declining revenues during the Great Depression, other states moved toward a sales tax, recognizing the decline in money coming from income taxes (Wilkison). Roosevelt resisted broad sales taxes. Instead he increased the income tax on the state’s wealthiest people. He also led the way in adopting more excise taxes, including a gasoline tax. (Thorndike 2003). Excise taxes, from their roots in the colonies, were used to tax gasoline, cigarettes, and after the 21st Amendment and the repeal of Prohibition, alcohol was taxed as well. Gas taxes began in the U.S. in 1919 and had spread to every state before 1930, with New York being the last. Fuel taxes were the dominant state tax revenue from 1927 to 1944, until the general retail sales tax took hold. While the taxes from motor fuels increased states’ revenues, the decline in corporate income and property tax revenues propelled the states to the general retail sales tax. Mississippi was the first to employ a general sales tax in 1932 with 21 other states using it by 1938, while New York would not implement the general sales tax until years after this window (Howe and Reeb 1997, 109-121).

Roosevelt’s “Square Deal”

On April 8th, during his first year as governor, he enacted the gasoline tax, a universal two cent per gallon charge beginning May 1. The tax was introduced for multiple reasons. First, property taxes were the major source of revenue during the 1920s. However, farmers were facing increasing difficulties meeting their property tax burden, as farm incomes fell more than the assessed values of farm land. Second, property taxes were funding New York’s rising spending on highways, and there was sentiment that highway users, automobile owners and gasoline buyers, should bear most of the burden of the tax.
Like the rest of the country, New York farmers had struggled during the decade before the Great Depression. During the 1920s farm profits declined, not only for the large growers, but perhaps more harshly affecting small family farms. However, New York farmers had a different problem; they seemed to be only marginally productive. The hardship of meager production was intensified by low prices, and many were abandoning their land. Because of the declines in farm income, farmers in New York were especially hard hit by state and local taxes on real estate. The assessed values of farms were not adjusted to declining incomes as quickly. Since both income and property taxes were assessed as percentages of value, property taxes did not fluctuate as much as income taxes did. Roosevelt argues: ‘The businessman pays a tax on his profits and on his income. The farmer pays a real-estate tax, but he pays it whether he is making any money or not.’ Taxes on farm property were about the same every year, regardless of whether they made good at the market, or made nothing. Experts from the State Tax Commission also agreed, the ‘ownership of property is not necessarily evidence of tax-paying ability.’ New York needed a different kind of farming solution, very different from the later New Deal solution of slaughtering and destroying livestock and crops (Reed 2011).

The belief was that farmers were paying more than their share of state and local taxes. The state depended heavily on property taxes, and Roosevelt and the legislature sought a solution that would decrease this dependence on real estate taxes. The turmoil over property taxes began in 1916 when the Legislative Committee on Taxation had put forth the issue of excessive taxes on real estate. The sentiment continued in 1922 when the committee restated that ‘real property in the State is being much overtaxed proportionally,’ and then brought up again in 1925 and 1926. By 1929, when Governor Roosevelt had taken the reins, there was an agreement across party lines that something needed to be done to relieve the farmers of their tax burden. The
problem was agreeing on a solution. The New York State Association of Real Estate Boards proposed a gasoline tax, and insisted that this would be a tax of ‘pure justice and equity.’ All other states save one had implemented a gas tax, and the New York Times opined that it was now needed in New York. The Wall Street Journal editors declared ‘There can be no real farm relief if the states tax agriculture to death,’ (Thorndike 2003).

Governor Roosevelt created a panel of political and farm leaders, which included 18 Republicans. He dubbed this panel the Agricultural Advisory Commission, and during his first week in office he asked them for a reform program. Roosevelt appointed Henry J. Morgenthau Jr. as the head of the Commission, a close friend and neighbor with a very successful farm in the Hudson River Valley and the publisher of the American Agriculturalist, a top journal for farmers. Morgenthau followed Roosevelt to the White House as the Secretary of Treasury. Roosevelt asked Morgenthau, ‘What can the state of New York do to aid agriculture, give farmers a square deal and help make the farm dollar go as far as the dollar of the city man?’ The Commission joined the real estate lobby in proposing a gasoline tax, shifting the tax burden from the farmers and county property taxes. Counties in New York were required by law to pay 35% of highway construction costs, about $9 million a year in 1929. Counties had raised this money through property taxes, which was easy for wealthier counties, and difficult for rural, poorer counties. These mostly rural counties had a hard time raising this money from a smaller tax base, and the counties had largely increased the tax rates to make up the difference, putting even more strain on its inhabitants (Thorndike 2003).

Mark Graves, a member of the farm panel, and State Tax Commissioner, provided this example for the Agricultural Advisory Commission. ‘‘A farmer owning a ten thousand dollar farm in Erie County, for example, could pay $5.70 once and would have completed his payment
of the cost for the state highway system. Whereas, if he owned the same farm in Yates County, it would cost him $464.50.” The Commission suggested that the state pay the highway costs, by using this gasoline tax with estimated revenue between $20 and $22 million. The claim was that about 40% was needed for highway construction costs and other state roads, and the remainder could be doled out to the counties to help pay for the secondary road system. In another shocking statistical example, “in 1927 only 15.8% of the total revenue for streets and highways came from owners and operators of motor vehicles, while 82% came chiefly from the owners of real estate…” This gas tax would be a ‘square deal’ as those who benefited from the road and highway systems would be paying for them. Another claim to the fairness of the deal was that it would benefit every property owner and taxpayer, not just the farmers, by removing such a heavy tax burden from real estate taxes (Thorndike 2003).

Roosevelt described the tax as a user fee, as those who received the benefits of the services rendered, highway and road system construction and maintenance, would be paying for them, and under a universally equal system of taxation. As another argument based on the perks received, Roosevelt claimed that by participating, cars and tires would last longer, and costs of operating vehicles and repair bills would decrease. Roosevelt was so intent on the ‘user fee’ idea that he even called for rebates for consumers who purchased gas, but did not travel on public highways, including “farm tractors, stationary gasoline engines, boats, and airplanes.” Other states had created similar goals to help ensure and pass that the tax was indeed fair (Thorndike 2003).

As this gasoline tax narrowed the base for property taxes, dissenters argued “that it now burdened certain types of wealth while letting other escape completely.” An economist from New York University, Paul Studensky, pointed out that the gasoline tax ‘is popular because it is
used for a popular purpose. It is paid in the final analysis by the users of the roads in proportion to the use.’ However, Studensky also warned that shifting any revenue from the gas tax to other uses could create problems (Thorndike 2003).

Roosevelt finally asserted, ‘I am convinced that this gasoline tax is proper, sound, and fair.’ The New York Times agreed, declaring it ‘eminently fair,’ but also agreed with Studensky’s warning of using the revenue for other purposes. The Wall Street Journal shared the sentiment, opining that a reasonable tax devoted to its proper purpose would be ‘cheerfully met,’ but using the revenue for unrelated needs could cause outrage. By the time Roosevelt signed the budget bill on April 8, 1929, New York was the last state to institute a gasoline tax (Thorndike 2003).

**Presaging the Future: Roosevelt’s New York New Deal**

Despite facing a Republican legislature that often opposed his policies, Governor Roosevelt was able to push through many bills to help the state of New York during the Great Depression (Robinson). “Roosevelt became the first state governor to advocate for a federal old-age pension system. He would push through the legislature an old-age insurance bill that would provide insurance for New York citizens over 70 years old,” (Robinson). In 1931 Roosevelt established the Temporary Relief Administration which provided assistance to unemployed New Yorkers. He also signed the Power Authority Act, “which provided for public development of the state’s waterpower resources” (Robinson). Roosevelt developed other legislation that put limits on work hours (Owen IV, et al.). “He pursued an activist agenda, enhancing the power of state agencies … and increasing regulatory supervision of business.” Another pioneering program was “to raise commodity prices by taking land out of production,” (Covert and Price). Programs similar to these were enacted at the federal level during President Roosevelt’s first 100 days in the White House, showing his invaluable experience as New York Governor at the outset
of the Great Depression (Lupinskie-Huvane and Singer 1998, 3-5). Roosevelt narrowly won in 1928 but won in a landslide in 1930, after his first term as Governor (Brinkley 2000).

**Long Island Experience**

New York state government aid to Long Island is just one example of the relief activity throughout New York. On Long Island in 1930, the state and local governments were having trouble meeting the needs of the people. In the city of Long Beach, there was a drastic cut of public employees because there was no work, and no money in the city treasury to pay them. The Welfare Department in Hempstead had an enormous increase in appeals for assistance from families. Many had been out of work for some time and were unable to pay taxes or interest charges and were in danger of losing their homes. In Islip and Glen Cove, city leaders tried to get the state government to provide money for relief. G. Wilber Doughty, Nassau Supervisor, believed that the county government was willing and able to start work programs but was unable to do so because of the State Highway Department. Governor Roosevelt actively responded to these requests for state government assistance. He pressed the state departments to provide road construction funds, and a work relief program (Lupinskie-Huvane and Singer 1998, 3-5).

However, these state relief plans seemed insufficient. Reverend Francis J. Healey of St. Joseph’s Church at Garden City called upon the federal government to ‘set up the machinery to supply the worker with work.’ He believed that the depression was caused by a failure of the economic system, and millions of people with the desire to work, could not find a job. Similarly, State Supreme Court Justice Thomas J. Cuffs demanded that the U.S. government create public improvement projects to rectify this problem, and pull the country out of the Depression (Lupinskie-Huvane and Singer 1998, 3-5).
The Nassau Daily Review later attributed the New Deal to Roosevelt’s experience as the Governor of New York, ‘practically every provision of the Nassau county public works relief program, adopted by the board of supervisors in November, 1931, is incorporated in the Roosevelt (New Deal) job increase plan.’ Harry Hopkins was the director of the national public works effort, and was the former director of relief efforts in the State of New York (Lupinskie-Huvane and Singer 1998, 3-5).

Taxes

Before the establishment of the income tax, alcohol taxes and tariffs were the major source of revenue for the federal government. Between 1870 and 1920 they provided almost 80% of the revenue collected (Thornton and Weise 2001, 95-105). Nationally, government revenue at the turn of the century was 7% of Gross Domestic Product. The federal share of that revenue amounted to 2.71% of GDP; states collected 0.76% of GDP; and local governments took in 3.56% of GDP (Chantrill). In 1913, when the federal income tax was created, it was quickly recognized as a possible major source of national revenue (Thornton and Weise 2001, 95-105). Using the income tax to raise more money, federal revenue rose during World War I and in 1921, peaked at 8.4% of GDP, with total revenue at 14.6% of GDP (Chantrill).

For the rest of the 1920s governments received revenue of between 11% and 12% of GDP. However, there were tax increases during the Great Depression, increasing government revenue to 19.1% of GDP in 1933. It was split into 5.78% federal, 4.19% state, and 9.16% local. Right after the recession of 1937, the take increased to 20.3% of GDP, split to 8.39% federal, 5.36% state, and 6.56% local. A trend can be seen from World War I through the Great Depression; taxes were moving up the ladder from local to state governments, and further to the
federal government (Chantrill). Table 2 shows taxes as a percentage of national income—distinct from GDP measurements—and the change after the beginning of the Great Depression:

Table 2
Taxes as a Percentage of National Income

<table>
<thead>
<tr>
<th></th>
<th>1929</th>
<th>1932</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total tax burden</td>
<td>11.6</td>
<td>21.1</td>
<td>81.9%</td>
</tr>
<tr>
<td>Federal Taxes</td>
<td>4.2</td>
<td>4.7</td>
<td>11.9%</td>
</tr>
<tr>
<td>State Taxes</td>
<td>1.9</td>
<td>4.6</td>
<td>142.11%</td>
</tr>
<tr>
<td>Local Taxes</td>
<td>5.4</td>
<td>11.7</td>
<td>116.67%</td>
</tr>
</tbody>
</table>

Source: Statistics collected by David Beito and quoted in Thornton and Weise (2001, 95-105)

In the early 1900s the governments received almost all revenue from ad-valorem taxes, which are tariffs, and sales and property taxes. The federal government received money mostly from tariffs, and the state and local governments received revenue from property taxes, before sales taxes were implemented. Ad-valorem taxes rose from about 5% to 6% of GDP to hover between 10% and 12%, and then peaked at 14.3% of GDP in 1933, in part because GDP fell so sharply between 1929 and 1939. Another tax that was levied to pay for social insurance began in 1937 with the Federal Insurance Contributions Act (FICA), which funded Social Security. These taxes began at 0.7% of GDP and rose to 1.85% in 1940. With the advent of the federal income tax in 1913, things began to change; income tax collections were 4.71% of GDP in 1921. During most of the 1920’s and through the 1930’s they had sunk to about 2% of GDP (Chantrill).

State governments received money split about equally from ad-valorem taxes, income taxes, and fees and business revenue before the economic growth of the 1920’s. They began to collect money from income taxes in the 1920’s and from social insurance taxes in the 1930’s. Local governments received revenue relatively equally from ad-valorem taxes, and fees and business revenue. Even after the establishment of the income tax, most cities receive little from income taxes, relying almost completely on ad-valorem and property taxes (Chantrill).
Income taxes were adopted in many states in the 1910’s, including North Carolina, North Dakota, and New York in 1919 (Howe and Reeb 1997, 109-121). New York’s rate was introduced at 3% and rose to a maximum of 8 percent on incomes which over $140,000 (Proposed Income Tax Increases), roughly calculated to be over $10.5 million in 1919, from 2011 dollars (Inflation Calculator 2012). However, during the Great Depression, federal revenue from the income tax fell by 60% between 1930 and 1933. This led to the reinstatement of taxes on alcohol (Thornton and Weise 2001, 95-105).

The property tax was the largest tax for most Americans in terms of real income. Property was usually the most significant piece of wealth for people, making it hard to evade this tax, and a great potential of losing their property if caught. “According to Beito, ‘throughout the 1920’s, the general property tax accounted for over 90 percent of taxes levied by all cities over 30,000 in population,’” (qtd. in Thornton and Weise 2001, 95-105). The importance of property taxes was largely due to the loss of revenue from sales and licenses related to alcohol, after Prohibition, the 18th Amendment. In an almost artificial bubble, revenue from property taxes could be increased based on higher property values and assessments, rather than an increase in tax rates. This was accepted during the 1920s because of the economic growth (Thornton and Weise 2001, 95-105). However, revenue fell in the years of the Great Depression, with shrinking property values and growing delinquencies as shown in Table 3.
The American people saw a large rise in their property taxes in real terms during the Great Depression. "Even if tax rates remained the same, tax burdens increased because the market value of property fell relative to assessed values. The real burden also increased because personal income was falling relative to property tax bills. Finally, the real cost rose because price deflation increased the purchasing power of the dollar. Property taxes had increased on three levels, causing a significant rise in the tax burden of Americans during the Great Depression. Tax delinquency went from 10% to higher than 30% (Thornton and Weise 2001, 95-105).

While the states saw a huge increase in revenue from gasoline taxes, corporate income taxes and property taxes (for many reasons) fell significantly in the first years of the Great Depression. "Local real estate taxes declined from $4,337 million in 1929 to $3,744 million in 1934, and … state realty taxes declined from 27 percent of total revenue in 1929, to 19 percent in 1932, to only 7 percent in 1937," (Thornton and Weise 2001, 95-105). The fuel tax made up for the loss but state and local governments sought to increase overall state revenue, to help with state and local expenditures, especially social welfare. They chose the general sales tax. The tax was imposed on a broad base because it was proportional to spending and could remain a low
percentage and thus have a relatively low impact on individuals. Mississippi was the first to enact a sales tax in 1932, with 20 other states following suit by 1938. Further, a local general sales tax was first adopted in New York City in 1934 and in New Orleans in 1936, largely because of the increases in property taxes and the rising rates of foreclosures (Howe and Reeb 1997, 109-121).

**The Repeal of Prohibition**

Reportedly, “on his second Sunday in the White House in March 1933, President Roosevelt remarked at dinner, ‘I think this would be a good time for beer.’ That same night, he drafted a message asking Congress [for a Constitutional Amendment] to end Prohibition.” The House approved it on the following Tuesday, and the Senate followed suit two days later. Before the end of the year, enough states ratified the amendment that it became the 21st Amendment to the Constitution, repealing the 18th Amendment to the Constitution (Reed 2011).

Politicians had supported the repeal of Prohibition to provide the local, state, and federal governments with increased revenues, to recuperate the losses seen in decreasing moneys from property taxes. This had an interesting benefit to the many citizens. While the government collected more taxes, consumers saw a decline in the price of alcoholic drinks (Thornton and Weise 2001, 95-105).

Thornton and Weise estimated that the price decline saved consumers an amount equal to 2.5% of GDP; as prices fell, quality improved, and the transactions costs of drinking fell. “Even if we ignore quality, information, and transactions costs, the Repeal of Prohibition, along with a 100 percent tax on alcohol products, would still leave the American alcohol consumer better off.” (Thornton and Weise 2001, 95-105).
State and local governments raised revenue through licensing fees and other alcohol-related taxes, while the federal taxes on alcohol raised money that could be given to state and local governments through grants, public works, and other assistance programs. Repeal also freed up resources that had been devoted to enforcing prohibition (Thornton and Weise 2001, 95-105).

The increase in the coffers was immense. In 1932 there was no money coming from alcohol taxes and licenses in the United States. By 1936 city revenue from liquor licensing had increased to $40 million, and by the end of the 1930’s had risen to $70 million. State revenue was the other avenue for taxes on alcohol. By 1938 state governments saw revenues in excess of $250 million from alcohol taxes, and more than $60 million from “state liquor monopolies.” New York State reported revenue of $3.832 million in 1934, and $9.523 million in 1935 (New York: Annual Report). Federal statistics indicate that New York received $13.552 million in 1937 (Fishback and Gutberlet 2012). This revenue could then be used to help city governments during the Depression, as grants or other aid. Meanwhile, the federal government saw revenue climb to $259 million in 1934 and to $624 million by the end of the decade, from alcohol taxes alone. This, in part, allowed the federal government to attempt to provide more relief for the unemployed and poor (Thornton and Weise 2001, 95-105).

**Governor Herbert Lehman**

Herbert Lehman was New York’s Lieutenant Governor under Roosevelt and won the governorship in a landslide in 1932. He entered politics in the 1920’s through his association with Governor Al Smith. Smith helped Lehman win the nomination and ultimately the position of Lieutenant Governor in 1928. Herbert Lehman was the baby of the wealthy Lehman family. The Lehman Brothers company went from a leading cotton and commodity brokerage firm to an
investment banking firm in the early 1900s. When Herbert Lehman graduated from Williams College in 1899, he worked for a textile manufacturer until 1908 when he joined the family business. He earned the rank of Colonel in the U.S. Army during World War I and then served with Roosevelt in the Navy Department during the war (Tananbaum 2009).

During World War I, Lehman served in several federal administration positions where he oversaw relief efforts. This later helped him as Lieutenant Governor and Governor of New York (Rainbolt). Lehman had an immense “sense of social responsibility” and undertook many philanthropic causes throughout his life; an attitude he shared with his wife Edith Altschul, whose father was affiliated with another prominent investment bank (Tananbaum 2009).

After Lehman won the Lieutenant Governor race in 1928 by a narrow margin, he became a major contributor in developing and implementing state policies. Roosevelt found Lehman’s experiences from large business to philanthropy invaluable. Joking about his integrity and wealth Roosevelt once remarked: “I can leave the combination of my safe to Colonel Lehman, knowing that it will be in safe hands,” (Owen IV, et al.).

Lieutenant Governor Lehman drew from his “business expertise to streamline state purchasing practices and promote cooperation and prevent duplication among state agencies.” For example, when he investigated the state mental hospitals, he found horrible conditions, and asked Roosevelt for a $50 million bond to build new facilities. He showed his stern military side when Roosevelt was out of the state. As Acting Governor he used state troopers to stop a riot at Auburn State Prison. He also dealt with the City Trust Company bank failure.

In 1930, Governor Roosevelt and Lieutenant Governor Lehman were reelected in landslides (Tananbaum 2009). In 1931 Lehman led the effort to persuade the state legislature to
create the Temporary Emergency Relief Administration, the first comprehensive relief program among the states (Tananbaum 2009).

In 1932 when Roosevelt handily defeated Herbert Hoover for the Presidency, Lehman was elected New York’s governor by a record 840,000 votes. The New York Times penned that this victory was a tribute to him and a reward to a “faithful and able public servant.” In 1934 Lehman was reelected by more than 800,000 votes. His belief that ‘government is for the people’ and that it should ‘concern itself with the solution of human as well as material problems,’ and ‘it must be flexible enough to meet the changing conditions of the world,’ resonated with New Yorkers as he tried to pull them through the Great Depression (Tananbaum 2009).

Governor Lehman expanded the policies of former Governors Smith and Roosevelt, using the “power of the state government to help New Yorkers.” Lehman created his own “Little New Deal” in New York during his second term, which was modeled after Roosevelt’s national program. Some of the important state programs included “a minimum wage bill for women and children and a reduction in their working hours, relief for the unemployed and those unable to work, a state unemployment insurance program, an improved Workmen’s Compensation plan, limits on the use of injunctions in labor disputes, mortgage relief for home owners, an increase in public housing, cheaper utility rates, and help for farmers. Lehman was also able to obtain the maximum funding from the Civil Works Administration, the National Recovery Administration, the Works Progress Administration, the Reconstruction Finance Corporation, and other federal programs, for the state of New York (Tananbaum 2009).

Besides the “Little New Deal,” Lehman slashed state income tax rates and turned the budget deficit into a “sizable surplus” (Brick, Binker, and Regenhardt). Because of Lehman’s
skills working with special interest groups, and powerful politicians and bureaucrats, he was able to improve state government operations, bring new regulation to the utilities, and change parts of the criminal justice system. He turned a $106 million deficit in his election year of 1932 into an $80 million surplus when he left office 10 years later (Rainbolt).

Lehman’s first plan as governor included construction of “a new Meadowbrook Causeway to Jones Beach” and also a part connecting Long Beach (Lupinskie-Huvane and Singer 1998, 3-5). Governor Lehman also formed a commission for state racing, while other states began similar programs as gambling was reinitiated (Hastings 2010).

**New Deal and State Government Activity on Long Island**

The experiences of many local communities in New York during the 1930s are exemplified by the situation in Long Island. From the national effort that was the New Deal, headlines in 1933 in *The Garden City News* of New York, proclaim “Garden City’s Part In the N.R.A. Program”, “Federal Millions For Long Island Work Projects”, and “Work on P.O. Soon To Start.” New York received federal aid to build four new post office buildings in Nassau County and another five in Suffolk County. New York was receiving aid from the federal programs. Another article in October 1934 headlined, “Over Nine Millions Spent For Relief In Nassau.” In August 1934 Hempstead claimed that their Better Housing Program Committee used provisions from the National Housing Act to improve their community. On August 30th, *The Hempstead Sentinel* praised the federal government for taking the initiative and called on local governments and communities to do their part.” Also in the month of “August, 1934, the Hempstead School Board expressed amazement at how fast the Public Works Division of the Federal Government had made available money for school construction,” (Lupinskie-Huvane and Singer 1998, 3-5).
The cities and citizens of Long Island did their part to end the Great Depression. In Glen Cove in July of 1933, a committee of civic groups and business leaders was formed. They pushed for reemployment of unemployed local citizens. In September of 1933 there was a county meeting attended by 50,000 people. It was at the Mineola Fair Grounds, and supported the National Recovery program, organizing parades in communities around Long Island. In the same month, the Playground Players at the Hempstead High School Auditorium put on two performances, raising money for Mayor Chamberlin’s Unemployment Relief Committee (Lupinskie-Huvane and Singer 1998, 3-5).

Contrary to the general movement of Long Island, many citizens did not embrace the New Deal. A Professor spoke at Hempstead High School, criticizing the Roosevelt administration for its “orgy of borrowing and spending.” A Manhasset woman sold license plates that read “‘Is This Democracy: Fabulous Promises, Destructive Taxes, Reckless Spending.” Voters elected Republican candidates for city governments. “In May, 1935, The Nassau Daily Review reported charges by the Nassau County Bankers’ and Clearing House Association that the New Deal was the cause of the nation’s economic and social problems.” All of this came from Roosevelt’s former state, where he put into action plans similar to the national New Deal, and where Governor Lehman was doing the same (Lupinskie-Huvane and Singer 1998, 3-5).

In 1935 with the arrival of Roosevelt’s “Second New Deal,” Long Island cities and counties were heavily involved. In November of 1935, Manhasset and Great Neck used money from the Works Progress Administration to improve school buildings, and to build new facilities. Great Neck used WPA money for adult education classes. “Hempstead Village rebuilt its sewer system as part of a work relief program.” The county of Nassau devoted more than a million dollars of federal money to construct sidewalks. Several other New York City projects benefited
to the Long Island citizens, including construction of LaGuardia Airport, the Triborough Bridge, and the Queens Midtown Tunnel. Many projects were completed as people worked on sewers, parks, roads, buildings, and beaches, as well as the preservation of historical sites. Long Island did not have a permanent Civilian Conservation Corps work camp, but Corps members completed projects in Hither Hills State Park in Suffolk County, and at Bethpage State Park in Nassau County. The Works Progress Administration spent over a million federal dollars in Suffolk County by September of 1936. Projects ranged from “supporting a State Game Farm, to repairing an incinerator gutted by fire in Huntington, to painting Central Islip and Kings Park State Hospitals. There are many murals from the WPA still displayed on Long Island including fire houses, schools, and post offices (Lupinskie-Huvane and Singer 1998, 3-5). However, reported total federal spending on relief and recovery per capita was less than $350 in the State of New York, between 1933 and 1939 (Nelson 2010).

There was also scandal on Long Island in WPA programs. “On December 9, 1935, The Nassau Daily Review [sic] demanded the removal of Harold Howe as WPA Director for Nassau and Suffolk Counties because he had assigned ‘unprepared office workers to manual labor in the wintry cold at Jones Beach.’ The newspaper stated further that this was the last straw in the evidence of mismanagement in Nassau County. A grand jury met to investigate the county relief administration’s conduct. In another scandal, “The Long Island Sun reported on an investigation into connections between the WPA and illegal gambling at carnivals” with the purpose of raising money for local charities. A rigged wheel of fortune in Copiague, operated by Works Progress Administration workers led to the arrest of eight people (Lupinskie-Huvane and Singer 1998, 3-5).
The resistance in Nassau County continued in the presidential election of 1936, with the local papers alleging corruption in the projects sponsored by the federal government. They also backed Roosevelt’s opposition (Lupinskie-Huvane and Singer 1998, 3-5), Kansas Republican Alf Landon (Leip 2012). While Roosevelt won 60.8% of the popular vote, and Landon received 36.5%, Roosevelt carried every state except Maine and Vermont, losing only 8 of the 531 electoral votes (Leip 2012).

**President Roosevelt’s Policies Based on his Experience as New York Governor**

One of Roosevelt’s main criticisms of President Hoover at the beginning of the Great Depression was his failure to balance the budget. While he “denounced excessive government intervention in the economy, he was one of the first political leaders, as Governor of New York, to recognize that the economy would not recover from the Stock Market crash and other happenings of the Depression. He believed ‘that there is a duty on the part of government to do something about this,’ but he continued to criticize Hoover for “expanding the bureaucracy,” after his Democratic presidential nomination. He pushed for modest reforms in the state of New York, including lowering utilities rates, developing public electric power, and reducing taxes on farmers. Later, he provided relief to the unemployed and began to call on President Hoover, to implement national insurance for the unemployed, as well as other programs to help those without jobs. Roosevelt seldom let his own progressive thoughts slip on the campaign trail. At the Commonwealth Club in San Francisco, he said to help the economy revive the government needed to distribute ‘wealth and products more equitably,’ and provide ‘everyone an avenue to possess himself of a portion of that plenty sufficient for his needs, through his own work,’ (Brinkley 2000).
From his own complaints as Governor of New York, as President, he passed the Social Security Act of 1935, which created the first national social insurance and public assistance system. Also in connection to his Governorship, he signed a bill sponsored by New York Senator Robert Wagner, the National Labor Relations Act of 1935, which guaranteed workers’ rights to bargain collectively and to set up unions (Brinkley 2000).

**New York Schools**

A major expenditure in every state was schools. From 1921 to 1940, Frank P. Graves was the Commissioner of the State Education Department. There were huge changes during this time in both elementary and secondary education. “State aid to rural and city school districts more than doubled; thousands of rural school districts were consolidated and their one-room schools closed; standards for teacher education and certification were elevated; vocational education rapidly expanded; programs for special education and vocational rehabilitation for the handicapped initiated; and secondary education extended to the point where nearly half of students graduated from high school.” (Folts 1996)

In 1904 the division of statistics collected data on school district enrollment and finances, which were used to calculate the state aid for that district. A bureau of apportionment processed the claims from the districts for state aid. After 1925 this included transportation and building aid, previously provided for solely by the district and localities. The apportionment division then certified the claims to the Comptroller for payment out to the school districts, from money appropriated for such purposes by the Legislature. In the late 1920’s there were huge increases in state aid to the school districts, and the development of a new complex system of equalizing the aid provided. In 1921 a division of finance including accounting and auditing had been established. From an outside audit in 1928, that finance division was reorganized. The
reorganized finance division was headed by an assistant commissioner and included both the bureau of apportionment, and the bureau of statistics. It was then made responsible for preparing Department budget requests (Folts 1996).

There was a Regents’ Inquiry between 1935 and 1938 that investigated the “Character and Cost of Public Education.” It “was funded by a major grant from the General Education Board and chaired by Regent Owen D. Young, chief executive officer of General Electric.” This created a movement toward comprehensive education, and also worked to reorganize the management of the State’s Education Department. In 1937 they achieved a huge step in the direction of both those ends. They approved “associate commissioners in charge of public instruction,” which linked elementary and secondary education. Along with this, new managers for higher and professional education were approved, as well as for finance and administration (Folts 1996).

However, until 1928 there was no budgeting process in New York. The governor presented an annual proposal to the State Legislature. Officials from the State Education Department had been complaining about their salaries, which were lower than the same job titles in other agencies, or in urban libraries and schools. In 1937, the Legislature acted on this discrepancy with a revised structure for all state agencies, which was standardized by title, grade, and salary (Folts 1996).

In the years that followed, school services were improved by creating new elementary and secondary education divisions, with their own curriculum development. Also it created a division for examinations, and a bureau for educating the mentally and physically handicapped. Other important bureaus were established for the centralization of the school district, and for school business management (Folts 1996).
During the Great Depression, there were pay cuts for employees in higher salary grades, but they were able to avoid layoffs. During these years and into the 1950’s, political ideological competition brought public education protection from perceived political threats. “After 1934 school teachers and administrators were required to take a loyalty oath. A 1939 law mandated the dismissal of any educator in a public school or college who advocated the violent overthrow of lawful government. This act was aimed at the New York City school system, where a communist faction had taken control of the small teachers’ union in 1935 (Folts 1996).

From 1894 with the “Blaine Amendment” to the New York State Constitution, public money was not allowed to be used to support religious schools except for visitation and inspection purposes, which were deemed as rightful expenses of the state. However, in 1938, an amendment permitted transportation costs attending non-public schools was deemed a cost of the state (Folts 1996).

By the 1850s there were about 165 academies that provided secondary education in the state of New York. However, modern high school education did not develop form the academies that were private, but from forms of free public high schools that were served multiple districts, consolidated into the public high schools. Before the turn of the century, Melvil Dewey, the Secretary to the Regents promoted the organization of high schools in rural areas, using additional state aid. Consequently, in the “Roaring 20’s” and into the Great Depression of the 1930’s, high school enrollment grew immensely, and the State Education Department saw the need to develop comprehensive high schools (Folts 1996). Interestingly, the building of schools increased during the Great Depression. State statistics reported a steady decline in federal grants for education from 1931 at about $76,000, to just under $40,000 in 1935 (New York: Annual
Report). However, federal reports indicate that grants were just over $940,000 in 1931 and $1.156 million in 1937 (Fishback and Gutberlet 2012).

School Aid Quota System

From 1812 to 1851 state aid to schools came from the Common School Fund for common schools, and the Literature Fund for academies. However the funds did not keep up with the needs of the schools. Between 1851 and 1901 a real property tax provided some additional funding for school aid. Between 1901 and 1940 nearly all of the state aid to its school districts came from the General Fund. From the 1860s state aid was distributed by an ever more complex system of quotas, which were “fixed amounts of money regardless of district size or wealth. “There were quotas for teachers (1864), city superintendents (1864), high schools (1887, 1895), village superintendents (1889), non-resident high school pupils (1903), vocational teachers (1908), agriculture teachers (1917), etc. By 1929 there were forty different quotas, including those for the new central school districts.” After the quotas were calculated, the rest of the district’s aid depended on its school-age population, and average daily attendance—which became the only other factor after 1894. In 1902 average daily attendance was abandoned (but was used again after 1925), and an equalizing formula was set up, using a sliding scale quota of $125 to $200, “depending on assessed valuation” (Folts 1996).

Despite the increase in state aid before the turn of the century, one segment of the public school system in the state of New York was suffering. Most of the schools in rural areas had declining enrollments and decreasing tax bases from which to pull. State school officials had called for consolidation of the small country school districts for decades. The Legislature in 1917 formed the thousands of common school districts into “township units.” Without an equalizing formula the school taxes rose greatly, causing taxpayers to protest. The township
system only lasted a year. However, during World War I there was inflation, and a post-war agricultural depression exacerbated the crisis in funding schools in New York. State aid reliant upon the quota system could not keep up with the rapid inflation and deflation, and the poor districts especially, suffered. The rich city districts had constraints placed upon them by the state constitution’s limit on city debt, or indebtedness. During the 1920’s there were several major studies conducted by the Joint Committee on Rural Schools, the Friedsam Commission, and others, which investigated public school facilities, programs, and performance. The conclusion of these studies was a need for greater state aid, which must be equalized to help the poor districts, and to provide equal opportunities for education (Folts 1996).

The Legislature and Governor Al Smith were able to resolve the finance crisis, as during the 1920’s state aid to public schools went from under 10% to about 27% of the public school’s total costs. For comparison, it was about 38% of total cost in the 1990’s. The old quota system was abandoned for the most part in 1930. In 1925 the Cole-Rice Law created equalization, bringing spending up to a minimum statewide standard, initially $44 for an elementary student, and $73 for secondary. From recommendations of the Friedsam Commission, 1920s legislation raised state aid for both rural and urban school districts. However, it still favored the richer districts because they were willing to pay for better schools. This formula was in effect until 1962. After 1945 secondary school aid was given for grades 7 and 8, resulting in the eventual organization of the junior high school, promoted by the State Education Department since the 1920s (Folts 1996).

The Cole-Rice Law moved toward the creation of ‘central rural school districts’, through financial incentives, which appeared first in a statute in 1914. There were provisions for 50% aid for transportation and 25% for building. This resulted in “steady growth in the number of
centralizations, especially during the Great Depression in the 1930’s. Within the Department, there was a bureau of rural education which worked with the District Superintendents to encourage the centralization of rural schools. The Regents’ Inquiry criticized the Department’s disjointed approach and the small size of many of the centralized schools. In response, a Temporary State Commission on the State Education System (Rapp-Coudert Commission, 1941-1947) developed a ‘master plan’ to consolidate the schools effectively (Folts 1996).

During the 1930s educators had a vision, a comprehensive high school. This high school would educate all children for life and work in our democratic country. However, most of the consolidated central schools were simply not big enough for a full list of academic and vocational classes (Folts 1996).

Studies of the New York City school system by the State Education Department in 1933 and the Rapp-Coudert Commission in 1944 discovered great administrative inefficiencies, and there was not substantial improvement for several decades. “The Department’s school ‘inspectors’ were retitled ‘supervisors’ in 1926 and by the 1930’s consultative services to schools were being emphasized.” Beginning in 1931, the finance division gave advice on auditing, accounting, and budgeting to the new central rural school districts. By the 1940s, this advice was offered to all school districts, and a uniform accounting system had been created (Folts 1996).

By the 1920’s about 10% of students were attending private academies, most of which were Catholic schools. 147. “School construction reached new peaks during the mid- and later 1930’s, because of district centralization and federal Depression aid.” “Since the 1920’s the state, not the federal government, has been legally responsible for education of Indians in New
York. In the late 1930’s the Department changed its view, and begin to encourage teaching aboriginal languages and culture in school (Folts 1996).

In 1894, a compulsory attendance law was passed, requiring children 8 to 12 to attend school for 130 days, and working children 13 or 14 years old, to attend for 80 days. In 1896, the school year was increased to 160 days, and again to 180 days in 1913, where it currently stands. The official age when a child was no longer required to attend school was raised to 15 in 1916, 16 in 1936, and changed in 1994 to the end of the school year during which the child turns 16 (Folts 1996).

Ramifications

In the depressions and recessions before the Great Depression of 1930’s, governments typically took little to no action, relying on the invisible hand of the markets to correct economies. However, afterward, government action became the norm; whether it was industrial regulation, social insurance or welfare systems, taxation, deficit spending, or public works programs, governments would play a large role in correction and providing more stable economies Nelson 2010).

State and Federal Data

To get a fuller understanding of the New York state government’s financial moves in the 1930s, information was collected from the U.S. Bureau of Census reports on State Financial Statistics for 1930, 1931, and 1937 through 1940 and from the New York Annual Reports for 1931 through 1935. In New York, state reports were obtained for 1930 to 1935, and there are some interesting comparisons where the federal statistics overlap in 1931.
The total general property tax numbers in 1931 matched fairly closely, with the state reporting revenues of $2.728 million and the federal government reporting $2.606 million. The reported state income tax revenue for corporations was cut about in half from $56.275 million in 1931 to $27.730 million in 1935. However, the state income tax for individuals moved in the opposite direction, increasing by almost 150%, from $19.751 million in 1931 to $47.953 million in 1935. In an interesting correlation, the total income tax reported by the state from both corporations and individuals decreased from $76.026 million in 1931 to $59.056 million in 1933, but then rose to $75.683 million in 1935. The increase in individual taxes countered the decrease in corporate taxes, balancing after the implementation of the New Deal to previous totals before the Great Depression.

It is important to note that the state began reporting sales taxes and alcohol taxes in 1934, but tobacco products did not appear in New York State tax reports during this time. Motor Fuel taxes rose from $22.864 million in 1931 to $43.373 million in 1935, an increase of almost 100%. This motor fuel tax in 1931 had the exact same reported revenue from both the state and federal governments. There is however a huge discrepancy in the reports for all other business license taxes, with the state reporting only $16.114 million in revenue in 1931, while the federal report lists $60.975 million. Nonbusiness motor vehicle license taxes and permits had the exact same reported revenue from state and federal governments, at $31.054 million in 1931. The tax revenues remained relatively constant, never dropping below $30 million, and rising to $32.600 million in 1935.

Grants from the federal government for highways matched exactly in both reports in 1931, at $3.536 million. In state reports this number jumped to $14.949 million in 1932, fell to $7.845 million in 1933, and steadily rose to $16.745 million in 1935. There is a huge
discrepancy, however, in the reported grants for education. The state reports only $76,429 in 1931, falling to $39,909 in 1935. Meanwhile the federal report lists grants for education at $942,234 in 1931. While there was not a good category match in the federal statistics, it is interesting to note that state reports of federal grants for public health remained relatively constant from 1931 to 1935, reporting $1.363 million to $1.275 million, respectively. In other federal grants, unemployment compensation began in 1933 with a state report of $32.969 million, jumping by a factor of almost 2.5 to $80.708 million in 1934, and rising again by a factor of more than 3 to $245.461 million in 1935.

In another large discrepancy in the data, state reports for pension assessments were $14.709 million in 1931, while federal numbers indicate only $5.830 million. The state number rose and fell somewhat through 1934, but then leapt to $27.302 million in 1935. Federal reports claimed that it fell back to $12.789 million in 1937. Receipts from total interest were similar in 1931 between the state and federal reports, at $11.737 million and $12.095 million, respectively. However, the subcategories differed greatly. From sinking funds state reports indicate $8.790 million, while federal statistics reported only $4.613 million. Also, interest from public trust funds in the state was only $228,046, while the federal report showed more than 15 times the state number at $3.487 million.

In general government receipts in 1931, the state reported $1.743 million, while the federal government reported $1.281 million. However, the protection category matched almost exactly with a difference of less than $10,000, as the state reported $2.689 million, and federal statistics indicated $2.698 million in 1931. For development and conservation of natural resources the state reported receipts of only $185,120, while the federal statistics indicate 390,548. There was a relatively large discrepancy in the area of health and sanitation in 1931,
with the state report indicating only $58,450, while the federal number was $325,011. However, the highway numbers were almost equivalent, with the state reporting $339,663 and the federal statistics at $317,926 in 1931. The reports for charities, hospitals, and corrections were combined for the federal statistics, which indicated $2.474 million in 1931, while the state total for those three subcategories was only $1.142 million. In receipts for current services at schools in 1931, the state reported $296,141, about 60% of the federal report of $509,301. Similarly, for recreation in 1931, the state reported $580,997, a little less than half of the federal statistics report of $1.222 million.

Figure 1
New York State Revenue Streams by Category with Comparisons of Federal and New York Data Sources in 1931

Sources: Fishback and Gutberlet (2012) for the years 1931, 37, 38, 39, and 1940 and New York Annual Report for the years 1931-1935
Regression

A better understanding of the relationships between the economy and state tax revenues can be obtained by examining the experiences of a number of states during the 1930s. Theresa Gutberlet and Price Fishback compiled data on state tax revenues and other economic factors for 13 states from 1930 through 1940. New York State data does not appear in the federal panel for the regression. However, the national data was used to perform a regression analysis on the 13 states in the panel, Connecticut, New Hampshire, Rhode Island, Pennsylvania, Michigan, Ohio, Minnesota, Nebraska, Oklahoma, Colorado, New Mexico, Washington, and Virginia.

The purpose of this regression is to show the effects of several selected independent variables on the dependent variable, per capita state total revenue aside from federal grants in 1967 dollars. This regression can show the plausible effects of increases and decreases in
spending for each of the independent variables. The predicted coefficients show the magnitude of the effect on the real per capita state total revenue.

The independent variables chosen include: the per capita state income; total auto registrations; per capita federal government tax revenues collected from the state; per capita federal aid for state highways; federal relief grants per capita; and federal public works per capita. All dollar values are adjusted for inflation based on the Consumer Price Index with the 1967 value equal to 100.

Real per capita state income is thought to have a positive effect on the states’ revenue; as income goes up, the states will have more taxable and nontaxable sources and overall revenue should increase.

Federal tax revenues per capita are thought to have strong impact on the states’ revenues. There could be a decrease in federal taxes allowing states to receive more money, or an increase in federal taxes which would theoretically remove some of the states’ revenues. There is also the possibility that the federal tax changes have little effect and the states’ receipt of revenue is dictated by the needs of the individual state. If the correlation between per capita federal tax revenues and state per capita tax revenues is weak, then what dictates states’ revenues are the needs of the state, regardless of federal taxes.

For the following federal variables, they could have the feature of being a matching program, where the state would need to raise more revenue to try to increase their federal funding. This type of funding could have two effects: state revenues are used for other purposes, or states collect less money overall, able to use federal funding for some projects, and passing along the “savings” to their citizens.
The variable federal aid for state highways in per capita 1967 dollars is thought to impact the states’ revenues inversely. As federal aid increases, the need for highway money raised in the state could decrease, lowering the overall state revenue. If the state chooses to use the money for other purposes, it might choose not to decrease the revenue it collects.

Federal relief grants in per capita 1967 dollars should impact states’ revenues based on the citizens’ need for relief measures. It may be a tool to evaluate income and standard of living, which will impact states’ tax and nontax revenues.

The variable federal public works in per capita 1967 dollars could have a similar use to the federal relief grants, judging the overall economic standing of the state in its need or requisition of funds for public works such as highways and schools.

The last variable chosen, auto registrations, are predicted to have a direct relationship with state total revenue, as more auto registrations could mean people in general are doing better economically. With auto registrations come other fees, licenses, permits, and taxes, like the gasoline tax. The states would presumably have more taxable and nontaxable sources, increasing the level of states’ revenue.

The first regression was run with the dependent variable and only the per capita state income, to see the sole effects of this variable on per capita state revenue, without federal grants. These results appear under “result1” in Table 4.

The second regression was run with the dependent variable and all six independent variables mentioned above. This allows for an examination of their effects while controlling for per capita state total tax and nontax revenue, without federal grants. These results appear under “result2” in Table 4.
The third regression was run with the dependent variable, all six independent variables mentioned, and state and year fixed effects. The state effects control for features of the states like geography and climate, which do not change over time within the state, but vary across states. Events that strike the economy on a national scale, such as increases in federal tax rates, are controlled for with the year fixed effects. These results appear under “result3” in Table 4.

The fourth regression was run with the dependent variable and the six independent variables, with the state and year fixed effects, as well as state time trends. This allows for an even closer examination of the effects of the independent variables on real per capita state total tax and nontax revenue, without federal grants. By adding such controls, the goal is to determine the actual effects of each independent variable on the dependent variable. These results appear under “result4” in Table 4.

The final estimating equation has the form:

\[ R = \beta_0 + \beta_1V + \beta_2S + \beta_3Y + \beta_4T + \epsilon \]

where \( R \) is the per capita state revenue in real 1967 dollars, \( \beta_1V \) is a vector of the independent variables explained, \( \beta_2S \) is a vector of the state fixed effects, \( \beta_3Y \) is a vector of the year fixed effects, and \( \beta_4T \) is a vector of the time trends.

The results in Table 4 are presented below to show all regressions simultaneously, to evaluate the changes of adding further independent variables, then the state and year fixed effects, and then the state time trends.
In the first regression, the coefficient of 0.0246 for estimated real per capita state income is statistically significant with a t-value of 3.05. This means that an increase of $100 in real per capita state income would result in an increase of $2.46 in real per capita state total revenue.

Under “result2” the real per capita state income coefficient is no longer statistically significant. However, other independent variables do have statistical significance. The coefficient, 0.33692, for federal relief grants in per capita 1967 dollars is statistically significant with a t-value of 3. For a $100 increase in real per capita federal relief grants, real per capita state total revenue would have risen by about $33.69. The coefficient, 0.75947, for federal public works in per capita 1967 dollars is statistically significant with a t-value

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Truncated for space-the time trend coefficients were not statistically significant
of 3.15. For a $100 increase in real per capita federal public works, real per capita state total revenue would rise by about $75.95. The variable auto registrations has a coefficient of .000011, which is statistically significant with a t-value of 2.14. This means that auto registrations, although statistically significant, have a miniscule effect on real per capita state total revenue. It would take an increase of 10,000 auto registrations to increase the real per capita state total revenue by $0.11.

Under “result3”, the third regression contains all the previous variables plus the state and year fixed effects. This has drastically changed the coefficients and their statistical significance in the model. None of the variables that previously had statistically significant coefficients now have coefficients that are statistically significant; therefore the inclusion of the state and year fixed effects has controlled for more unknown variables, and the independent variables used are no longer statistically significant. Also of note is the change in sign of the variable real per capita federal aid for state highways from negative to positive.

In the fourth model under “result4”, none of the independent, state and year fixed effect, or state time trend coefficients are statistically significant. Again of note is the sign of the variable real per capita federal aid for state highways which has remained positive, in contrast to the negative sign attached in the second regression, “result2”. The sign of the coefficients for both the variable federal relief grants in per capita 1967 dollars, and for federal public works in per capita 1967 dollars, have changed from positive to negative, but none have statistical significance.

The regression was used to try to better understand the effects of the independent variables on per capita state tax revenues, aside from federal grants. Per capita state income was shown to have a positive effect in the first regression, with a statistically significant coefficient.
While the coefficient would remain positive, it was no longer significant after adding the other variables. Per capita federal tax revenues were thought to have a strong impact on per capita state tax revenue; this was shown to be false, never having a statistically significant coefficient. The prediction that per capita federal aid for state highways would have an inverse impact seemed correct in the second regression, however, it was not statistically significant, and would change signs in later regressions. Per capita federal relief grants and federal public works had statistically significant coefficients in the second regression, and had a direct impact on state tax revenue. However, after controlling for other effects, they were no longer significant, and the signs for both variables changed in the last regression. The coefficient for total auto registrations at first was statistically significant, but again would fail to be statistically significant after other terms were added. Four of the five variables were significant in the first two regressions, but seem to have a diminishing impact as more effects are controlled. In reality to accurately depict or predict the effects on state tax revenue, it is likely that there should be an immense number of variables, but this study has helped to explain some of the effects on per capita state tax revenue, and will lead to further investigation.
Works Cited


