STRATEGIC GEOGRAPHIC/ECONOMIC ADVANTAGE ANALYSIS

For

SULLIVAN COUNTY
PARTNERSHIP
FOR ECONOMIC DEVELOPMENT

May 2, 2014

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1. Executive Summary

Introduction

This report compares Sullivan, Albany, Orange, Saratoga, Tioga, and Ulster Counties based on the 3 main legislative objectives as well as indirect and ancillary influencers to see which casino location would benefit New York State the most. Under each main section there are sub-section topics where each of the 6 counties was measured, and if possible, ranked according to assumed benefit to the State of New York.

This study is NOT a casino feasibility study and assumes the feasibility (size, specific site location, and success, both financial and other) of the casino in each county is equal. In other words, the casino itself is a fixed variable for purposes of comparing the counties. The purpose of this study is to determine which county (not which casino) would benefit the state the most as a location for one or more casinos.

Although some of the ancillary influencers address topics such as traffic, the main legislative areas measure each county's "benefit to the state of New York" via its marginal propensity to consume and velocity of money. Simply put the county whose people are most likely to get the biggest bump in income from a casino and spend it the fastest is the county that will most likely fulfill the intent of the legislation and benefit the state the most. The reader will note some topics do not come to any conclusion but were included as agree between the client and consultant.

In order to maintain as much integrity as possible, our consultants attempted to avoid any specific information about casinos or sites. Public hearings, developer presentations, task forces, information from county specific agencies, etc. were all purposely avoided. Any information obtained from the client and/or that approaches subjectivity is called out in the study.

The executive summary Conclusion contains a "rank table" and categorizes the findings of each sub topic into "Strong," "Medium" and "Weak" arguments for Sullivan County.

Capacity Business Consulting was engaged to do this study on March 31, 2014 by the Sullivan County Partnership for Economic Development. All work was conducted by Eric Egeland, CPCU, AU and Michael Smith, MBA.

Background & Objective

The proposed amendment to section 9 of article 1 of the Constitution would allow the Legislature to authorize up to 7 casinos in New York State for the legislated purposes of promoting job growth, increasing aid to schools, and permitting local governments to lower property taxes through revenues generated.

The objectives of this study are to:

1. Compare the ability of Sullivan, Albany, Orange, Saratoga, Tioga and Ulster Counties to meet the legislative objectives of promoting job growth, increasing aid to schools, and permitting local governments to lower property taxes.
2. Compare the 6 counties using other relevant criteria that may indirectly impact the legislative objectives.
3. Compare the 6 in any other way that might influence decision makers.

Summary of Overall Study Results

Each topic section should be reviewed to fully understand the outcomes of that particular section, but the table below applies a simple summary rank of the results for all 6 counties in the 22 main areas that had conclusions.

The number 1 would be best for the state and 6 would be worst. The last column in the table indicates the factor (highest, lowest, best) that was considered in awarding a 1. For instance, if the purpose of a casino is to stimulate the economy, the county with the highest unemployment rate needs it the most hence that county is awarded a 1. The county with the lowest unemployment rate needs it the least and is awarded a 6.

Summary Chart	Sullivan	Ulster	Tioga	Orange	Albany	Saratoga	1 equals
Unemployment Rate	1	3	2	4	5	6	Highest
Historic Unemployment	1	3	2	4	6	5	Highest
Labor Force Decline	2	4	1	5	3	6	Highest
Labor Force Participation Rate	1	2	3	4	5	6	Lowest
Per Capita Income	1	3	2	4	5	6	Lowest
Historical Per Capita	1	3	2	4	6	5	Lowest
Average Salary Per Employee	1	2	6	3	5	4	Lowest
MPC Per Average Salary	1	2	6	3	5	4	Highest
Median Home Sales Price	1	3	2	4	5	6	Lowest
Job Growth Average	**1.1**	**2.8**	**2.9**	**3.9**	**5.0**	**5.3**	

	Sullivan	Ulster	Tioga	Orange	Albany	Saratoga	
Homeowner Vacancy Rate	1	2	5	3	4	4	Highest
Prop Tax/Income	2	3	6	1	4	5	Highest
Prop Tax/Home Value	2	4	1	3	5	6	Highest
Lower Property Taxes	**1.7**	**3.0**	**4.0**	**2.3**	**4.3**	**5.0**	

	Sullivan	Ulster	Tioga	Orange	Albany	Saratoga	
Highschool Grad or Higher	1	3	4	2	5	6	Lowest
Bachelors or Higher	1	4	2	3	6	5	Lowest
Aid to Schools Average	**1**	**3.5**	**3**	**2.5**	**5.5**	**5.5**	

	Sullivan	Ulster	Tioga	Orange	Albany	Saratoga	
Prop 1 Yes Votes	1	4	2	3	5	6	Highest
Prop 1 Blank Votes	1	3	5	6	4	2	Lowest
Healthcare Rank	1	3	5	4	2	6	Lowest
Crime	2	4	6	3	1	5	Higest
Natural Disasters	0	0	0	0	0	0	Equal
Traffic Density	1	3	2	4	6	5	Lowest
Distance From Manhattan	1	1	6	6	6	6	Best
Distance Between Comp.	2	3	5	1	4	6	Closest
Adaptive Reuse	1	2	2	2	2	2	Best
Indirect & Ancillary Influencers	**1.1**	**2.6**	**3.7**	**3.2**	**3.3**	**4.2**	

	Sullivan	Ulster	Tioga	Orange	Albany	Saratoga
Average All	**1.2**	**2.8**	**3.3**	**3.3**	**4.3**	**4.9**

Current Unemployment Rate - Section Conclusion

Current Unemployment Rank:
Sullivan 8.9%
Tioga 8.2%
Ulster 7.5%
Orange 6.6%
Albany 6%
Saratoga 5.9%

Of the 6 counties, Sullivan County has the highest current unemployment rate (8.9) and is 50.8% higher than the county with the lowest unemployment rate in the study, Saratoga (5.9).

Historic Unemployment - Section Conclusion

Historic Unemployment Rank:
Sullivan 6.73%
Tioga 5.67%
Ulster 5.51%
Orange 5.33%
Saratoga 4.65%
Albany 4.55%

Of the 6 counties, Sullivan County has the highest 23-year historical unemployment rate, which is almost double that of Saratoga and Albany Counties.

Sullivan is also affected disproportionately poorly during times of high unemployment.

Labor Force Participation Rate - Section Conclusion

Labor Force Participation Rate Rank:
Sullivan 55%
Ulster 58%
Tioga 60.8%
Orange 61.5%
Albany 62%
Saratoga 67%

Of the 6 counties in this study, Sullivan County (55%) had the lowest labor force participation rate. It is 17.9% lower than the highest Saratoga County (67%) and 11.1% lower than New York State.

People who fall outside the participation rate have, by definition "no interest in working" vs. the unemployed who are presumably "looking for work but unable to find it" and the employed who are obviously working. But, as noted in the Upjohn Institute article, this fails to take into account

"discouraged workers" or people who have an interest in working but have given up.

Factoring labor force participation rate alone, Sullivan County clearly has the lowest rate and thus it is reasonable to assume, the highest percentage of discouraged workers. It should be noted that these discouraged workers presumable have no income and if employed could spend a majority of their new salary on new consumption. It is also plausible, due to the history of resorts in Sullivan County, that many of the discouraged workers might have hospitality experience.

Average Salary per Employee - Section Conclusion

Average Salary per Employee Rank:
Sullivan $31,483
Ulster $32,508
Orange $35,649
Saratoga $39,718
Albany $43,310
Tioga $46,086

Of the 6 counties in this study, Sullivan County has the lowest average salary per employee ($31,483) which is 31.7% lower than Tioga County, which has the highest salary per employee ($46,086).

Marginal Propensity to Consume per Average Salary - Section Conclusion

MPC per Average Salary Rank:
Sullivan $903
Ulster $708
Orange $112

For every employee making the average county wage that takes a job at the casino average wage; Sullivan County will tend to put 708.5% more money ($903) per person into the economy than Orange County ($112) and 27.5% more than Ulster County ($708).

Albany, Saratoga and Tioga have a negative MPC which means the average casino salary is lower than the average current salary. For purposes of this particular MPC analysis, it is unlikely those workers would take the casino job.

Factoring marginal propensity to consume per average salary alone, it is logical to assume the state would benefit the most by placing a casino in the county that has the highest marginal propensity to consume.

Income & Marginal Propensity to Consume - Section Conclusion (property tax)

A portion of the rise in income spent by employees would obviously be applied to real property through upsizing, additions/improvements, and new construction. Any increase in tax base resulting from additions/improvements and new construction should help to lower

the overall tax rate to a county. In addition, it should improve the flow of money to New York real estate agents, attorneys, title companies, contractors, etc.

Income & Marginal Propensity to Consume - Section Conclusion (school aid)

A portion of the rise in income (if any) to the average worker taking the average casino job would obviously be applied to real property through upsizing, additions/improvements, and new construction. Any increase in school tax base resulting from additions/improvements and new construction should aid local schools and potentially lower the overall school tax rate.

Median Home Sale Price - Section Conclusion

Residential Median Home Sale Price Rank:
Sullivan $106,500
Tioga $109,760
Albany $195,500
Ulster $210,000
Orange $242,000
Saratoga $261,000

Sullivan County has the lowest median home sale price ($106,500) of the 6 counties in the study. It is also 59.2% lower than Saratoga County's ($261,000) and 56.0% lower than Orange County's ($242,000), the highest of the 6 counties in the study.

Factoring median home sale price alone it is reasonable to assume the state would benefit the most by placing a casino in the county with the lowest median home sale price, as the likelihood of purchasing such homes is higher.

When adding average wages and marginal propensity to consume, the likelihood of homes being bought in Sullivan County greatly improves over a county like Orange. All variables equal, a 30 year mortgage on a $106,500 home in Sullivan County is $572 per month. The average Sullivan County worker taking the average casino job would see a $4,754 rise in income. Conversely a 30 year mortgage on a $242,000 home in Orange County is $1,299 per month and the average Orange County worker taking the average casino job would see a $588 rise in income.

Median Home Sales Price - Section Conclusion (property tax)

Counties like Sullivan and Tioga containing homes with a median sales price of less than half that of the highest median sales price counties will have a higher likelihood of homes being purchased; especially in Sullivan where the rise in average income for an average casino worker is larger. Any increase in tax base resulting from new assessments and/or additions/improvements should help to lower the overall tax rate for that county.

Homeowner Vacancy Rate - Section Conclusion

Homeowner Vacancy Rates Rank:
Sullivan 4.8%
Ulster 2.4%
Orange 2.2%
Albany 6.6%
Saratoga 6.6%
Tioga 6.1%

Of the 6 counties in this study, Sullivan County has the highest homeowner vacancy rate (4.8%) which is double the vacancy rate of the second highest, Ulster County (2.4%). Sullivan County also has the highest homeowner vacancy rate of the 62 counties in NY.

Tioga County has the lowest homeowner vacancy rate of the 6 counties in the study at 1.1% and also has very few homes for sale.

Property tax as a percentage of income - Section Conclusion

Property Tax as a Percentage of Income Rank:
Orange 6.69%
Sullivan 6.36%
Ulster 6.27%
Albany 4.68%
Saratoga 4.43%
Tioga 4.04%

Of the 6 counties, Orange County has the highest property tax as a percentage of income (6.69%) and has the 6th highest property tax as a percentage of income of the 60 New York counties in the tax study.

Of the 6 counties, Sullivan County has the 2nd highest property tax as a percentage of income (6.36%) and has the 7th highest property tax as a percentage of income of the 60 New York counties in the tax study.

Tioga County has the lowest property tax (4.04%) as a percentage of income of the 6 counties in the study.

Factoring property tax as a percentage of income alone, it is logical to assume the state would benefit the most by placing a casino in the county with the highest property tax as a percentage of income as the new tax generated by the casino could lower the effective tax rate.

When adding the number of taxable properties to the mix (using employees, wages, and census as a guide) it is logical to assume the impact of casino taxes would be proportionately larger in a county like Sullivan or Tioga that have less taxable properties.

Education Achievement Levels - Section Conclusion

High School Graduation Rank:
Sullivan 84.5%
Orange 86.9%
Ulster 88.3%
Tioga 91.5%
Albany 91.6%
Saratoga 93.3%

Of the 6 counties in this study, Sullivan County has the lowest high school graduation rate (84.5%), which is 9.3% lower than Saratoga County (93.3%), the highest. Sullivan also has the lowest bachelor's degree attainment rate (20.5%), which is 46.3% lower than Albany County (38.2%), the highest.

Of the 6 counties in this study, Sullivan County is the only one with a high school graduation rate (84.5%) that is lower than the state's (84.9%). Sullivan County is also the furthest from the state in bachelor's degree attainment, and is 35.7% lower in bachelor's degree attainment than the state overall.

A county like Sullivan with the lowest average wage, highest unemployment rate, and highest discouraged worker rate, should see (and perceive) the biggest increase by taking the average casino job. A portion of that increase may go directly towards education or indirectly via increased property tax base.

Not only could schools be aided by tax and direct spend but according to many studies, including the APA study above, higher income families (and communities) have higher graduation rates. Higher graduation rates are linked to higher salaries, which are linked to larger homes that increases the school tax base giving more aid to schools. The perpetual circle improves itself.

Percentage of yes votes - Section Conclusion

Percentage of Yes Votes Rank:
Sullivan 73.4%
Tioga 64.7%
Orange 58.8%
Ulster 56.9%
Albany 44.5%
Saratoga 44.4%
Sullivan County has the highest percentage of Proposition 1 yes votes (74.4%) of the 6 counties in the study and all 62 counties in New York State. It is also 13.4% higher than next highest county, Tioga (64.7%) and 65.3% higher than Saratoga County (44.4%), the lowest of the 6 counties in the study.

Factoring percentage of yes votes alone, it is clear that the state would benefit the most by placing

a casino in the county where the community wants it the most.

Percentage of Blank Votes - Section Conclusion

Percentage of Blank Votes Rank:
Sullivan 3.3%
Saratoga 4.5%
Ulster 5.5%
Albany 6.0%
Tioga 6.1%
Orange 13.0%

Sullivan County has the lowest percentage of Proposition 1 blank votes (3.3%) of the 6 counties in the study and is 2nd lowest of all 62 counties in New York State. It is also 26.7% lower than the next county, Saratoga (4.5%) and 74.6% lower than Orange County (13.0%), the highest of the 6 counties in the study.

Factoring percentage of blank votes alone, one could assume Sullivan County is involved or cares the most about the vote and Orange County is involved or cares the least.

When adding the Yes Vote results, it is clear that Sullivan County cares and wants a casino whereas Saratoga cares the second most in the study, but does not want a casino.

It is also clear that the state would benefit the most by placing a casino in the county that is involved and cares the most, particularly if that county's Yes Vote was high showing majority public support for a casino.

County Healthcare Rankings - Section Conclusion

County Healthcare Rank:
Sullivan 61
Albany 30
Ulster 29
Orange 23
Tioga 12
Saratoga 5

Sullivan County ranks 2nd from lowest next to the Bronx out of the 62 counties in New York. The other 5 counties in the study rank above median with Saratoga ranking highest at 5th out of the 62 counties in New York State.

According to the CDC study above increases in education and income levels are keys to better health. Placing a casino in a county with the lowest income, highest unemployment, and worse health rankings could conspire to have the biggest impact on Medicaid costs.

Adaptive Re-use - Section Conclusion

Factoring adaptive re-use alone, the state would benefit most from any casino that utilizes previously cleared ground without a current structure, and especially utilizing a site originally designed as a hotel/resort with existing structure and grounds. According to information from the client, all of Sullivan County's proposed sites fit this criteria.

Medium for Sullivan County

Current & Historical Labor Force - Section Conclusion

Labor Force Growth/Decline Rank:
Tioga -7.79%
Sullivan -4.14%
Albany -2.69%
Ulster -1.53%
Orange +3.62%
Saratoga +5.02%

Of the 6 counties in this study, Sullivan County (-4.14%) had the 2nd biggest decline in the percentage of their labor force, losing a net 1,400 between 1990 and February 2014.

Between 1990 and February 2014, Tioga, Sullivan, Albany, and Ulster County's labor force shrunk by 7.79%, 4.14%, 2.69%, and 1.53% respectively. Orange and Saratoga County's labor force grew during this same period by 3.62% and 5.02% respectively.

Sullivan County was famous for a half-dozen large resorts in the 1950's, some of which didn't close until the late 1990's[1]. Although it is very difficult to statistically define using current available data sets, it would be reasonable to assume that a large portion of the labor force has some hospitality experience on their resumes. The high and steady county unemployment rate might indicate a high percentage of the unemployed workforce has hospitality experience.

Factoring change in labor force alone, it is reasonable to assume that counties like Orange and Saratoga have grown over the last 23-years and will continue to grow without a casino; while the counties of Tioga, Sullivan, Albany and Ulster have lost labor force and might benefit from casinos.

[1] http://en.wikipedia.org/wiki/Concord_Resort_Hotel

Per Capita Income - Section Conclusion

Per Capita Income Rank:
Sullivan 24,462
Tioga 26,831
Ulster 30,232
Orange 30,397
Albany 31,924
Saratoga 34,125

Of the 6 counties in this study, Sullivan County has the lowest current (2012) per capita income ($24,462) which is 28.3% lower than Saratoga, which has the highest per capita income ($34,125).

Sullivan County's current (2012) per capita income ($24,462) is 19.5% and 19.1% lower than neighboring Orange County ($30,397) and Ulster County ($30,232) respectively.

Historical Per Capita Income - Section Conclusion

Of the 6 counties in this study, Sullivan County has the lowest 53-year average per capita income ($12,365) which is 21.3% lower than Albany County's per capita income, which has the highest ($16,063).

Sullivan County's current (2012) per capita income ($12,365) is 14.2% and 13.5% lower than neighboring Orange County ($14,724) and Ulster County ($14,604) respectively.

Property Tax as a Percentage of Home Value - Section Conclusion

Property Tax as a Percentage of Home Value Rank:
Tioga 2.36%
Sullivan 1.99%
Orange 1.91%
Ulster 1.82%
Albany 1.75%
Saratoga 1.51%

Of the 6 counties, Tioga County has the highest property tax as a percentage of home value (2.36%) and is 113.5% higher than New York State's.

Sullivan County has the 2nd highest property tax as a percentage of home value (1.99%) and is 84.3% higher than New York State.

Saratoga County has the lowest current property tax as a percentage of home value (1.51%) next to Albany County (1.75%).

Factoring property tax as a percentage of home value alone, it is logical to assume the State would benefit the most by placing a casino in the county with the highest property tax as a percentage of

home value. Increased wages might result in property values rising and increasing the tax base without increasing the effective tax rate. This would have the same net effect as lowering property taxes on current home prices.

Adding the taxes generated by the casino will obviously add to the tax base and potentially lower the effective county tax rate as well. As stated in the Property Tax as a Percentage of Income Section Conclusion, that effect could be proportionately larger in a county with a smaller tax base like Sullivan or Tioga.

Crime Statistics - Section Conclusion

Property Crime Statistics Rank

Albany County	2.92%
Sullivan County	2.28%
Orange County	2.24%
Ulster County	2.01%
NYS	1.90%
Saratoga County	1.39%
Tioga County	1.25%

Albany County (2.92%) has the highest property crime statistics of the 6 counties in the study next to Sullivan County (2.28%).

Tioga County (1.25%) has the lowest property crime statistics of the 6 counties in the study next to Saratoga County (1.39%). Both are below NYS (1.90%).

There are many studies showing a link between higher wages and lower crime rates (see above NBER example). If a casino were to come to a county with high crime statistics and a high marginal propensity to consume (due to the biggest average rise in income), it is logical to assume a casino might have a real impact on lowering the crime rates of that county and thus lowering county and State crime fighting expenses.

Traffic Density - Section Conclusion

Traffic Density Rank:
Sullivan 10,097 to 29,782
Tioga 18,666 to 31,828
Ulster 10,097 to 64,065
Orange 44,218 to 88,423
Saratoga 44,529 to 112,122
Albany 38,324 to 127,999

Factoring traffic density alone, within the county, Sullivan County is the least dense in all directions. Albany County is the densest.

It is also clear that the NYS Thruway at the Rt. 17 intersection of Orange County and the Albany

County loop, especially the northern part including the NYS Thruway between Albany and Saratoga, are already congested areas. Assuming traffic coming from all over the state, these areas will get more congested no matter which county location is chosen for a casino.

Proximity & Distance Willing to Travel - Section Conclusion

Distance Rank

Orange County	59
Sullivan County	90
Ulster County	99
Ledyard, CT	127
Atlantic City, NJ	131
Wilkes-Barre, PA	131
Albany County	144
Saratoga County	182
Tioga County	211

Time with Traffic Rank

Orange County	78
Sullivan County	113
Wilkes-Barre, PA	143
Albany County	147
Ulster County	148
Atlantic City, NJ	149
Ledyard, CT	188
Saratoga County	190
Tioga County	219

The Ontario Problem Gambling Research Centre study states "…that most people do not actually visit their closest gambling venue most frequently." Multiple other studies point to vacation and gambling trips averaging over 50 but under 100 miles (one way).

Factoring proximity & distance willing to travel alone, it appears Sullivan County and Ulster County are between the averages and not the closest to Manhattan (our fixed variable source).

Distance from Existing Casinos - Section Conclusion

Distance from Atlantic City Rank

Orange	176
Sullivan	215
Ulster	218
Albany	264
Tioga	271
Saratoga	299

Distance from Wilkes-Barre Rank
Sullivan 88
Orange 98
Tioga 108
Ulster 123
Albany 197
Saratoga 222

Distance from Ledyard Rank
Orange 160
Albany 163
Ulster 178
Sullivan 189
Saratoga196
Tioga 302

Total Distance Rank
Orange 434
Sullivan 492
Ulster 519
Albany 624
Tioga 681
Saratoga 717

Orange is closest to Atlantic City, Ledyard, and overall, and is 2nd closest to Wilkes-Barre.

Sullivan County is closest to Wilkes-Barre, 2nd closest to Atlantic City and overall, and is 4th closest to Ledyard.

Factoring distance between existing casinos alone, the state would benefit most from a casino in Orange County as it is closest to the 3 biggest competitors and could potentially pull money from NJ, CT, and PA into New York.

Weak for Sullivan County

Natural Disasters - Section Conclusion

All 6 counties were designated as natural disaster areas due to damages caused by excessive rain and related flooding, high winds and hail that began May 1, 2013.

Factoring natural disasters alone, no remarkable statistics were found to highlight any one county.

Distance between Existing Casinos and Proposed Counties - Section Conclusion

As is, this section arrives at no relevant conclusion as it assumes **every** county will get a casino. However the client and/or state may find the radar charts useful by starting with their closest choice and eliminating locations.

Conclusion

It is very clear that Sullivan County is the most economically depressed of the 6 counties in this study. From high unemployment to low wages, to housing costs and taxes, and even crime and healthcare, Sullivan County is in need of the most help.

A key goal of economic stimulus packages is to get money circulating via encouraging people to spend. Local economic stimulus packages target the most economically-depressed areas not only because they need the most help from a social perspective, but because a fixed stimulus amount is relatively bigger to a low-income person than a higher-income person. The bigger the stimulus in relation to personal income, the more that person will turn around and spend. For instance, as taken from the marginal propensity to consume section of this study, a person getting a raise in annual income from $24,462 to $36,237 will spend $2,237 while a person whose income moves from $34,125 to $36,237 will only spend $401. Keep in mind that the person who makes $24,462 and receives that $2,237 will in turn spend $425 (again) vs. $76.19 for the 2nd $34,125 person receiving $401.

That rise in income/spending will go toward commodities such as homes. If the area has equally depressed home prices, it could mean more homes being bought/sold/upsized which circulates more money, multiple times (velocity). This concept is the same for education, healthcare, crime, etc. The bigger the rise in income, the more of it people spend. The cheaper the commodity, the more of them will be bought with said spend. The bigger the pain, the more of said spend will go towards fixing it. **The bigger the propensity to consume and the higher the velocity of money… the bigger the positive economic impact.**

Further economic impacts take place on the expense side. Increased income is linked to higher graduation rates, better health, and less crime. Any improvement in these areas has the potential to lower the State's costs for things like school aid, Medicaid, and State police.

If New York State's casino objective is to stimulate the State's economy, and the individual casino feasibility is a fixed variable, it is clear from this study that Sullivan County will circulate the most money the fastest and have the biggest impact on New York State's economy.

2. Methodologies & Assumptions

There are several study methods that were incorporated in this engagement:

- Interviews and collaborative discussions with client/employees,
- Research using existing secondary market statistics and data including statistical information already published and obtainable. Possible valuable sources of such information include, but are not limited to: U.S. government agencies; trade associations; data compilers; and, various web sources,
- Research using existing secondary market statistics and data including statistical information already published and obtainable to make correlation assumptions,
- Calculations using existing secondary market statistics and data to compare each county to the 5 others, and,
- Differentials were used extensively to show how high or low one county is compared to another for a particular area of data. For instance, Sullivan Unemployment – Albany Unemployment/Albany Unemployment = the differential between Sullivan and Albany Unemployment.

This study is NOT a casino feasibility study and assumes the feasibility, size and success, both financial and otherwise, of the casino in each county is equal. In other words, the casino itself is a fixed variable for purposes of comparing the counties.

The purpose of this study is to determine which county location, given this "fixed variable casino," would benefit the state the most. Although there are other factors measured, marginal propensity to consume and velocity of money are a major focus.

Velocity is important for measuring the rate at which money in circulation is used for purchasing goods and services. This helps investors gauge how robust the economy is, and is a key input in the determination of an economy's inflation calculation if all things held constant. Economies that exhibit a higher velocity of money relative to others tend to be further along in the business cycle and should have a higher rate of inflation.

Objectives were achieved via a Strategic Geographic Advantage Analysis. More specifically, the following activities were performed:

- Research (secondary) including:
    - Unemployment Rates
    - Historic Unemployment Rates
    - 23-year Average Unemployment Rates
    - 1991 – 1992 Recession
    - Current Labor Force

- Historical Labor Force
- Change in Labor Force
- Labor Force Participation Rate
- Per Capita Income
- Historic Per Capita Income
- Average 53-year Per Capita Income
- Average Salary Per Employee
- Marginal Propensity to Consume Per Average Salary
- Average Casino Salary
- Residential Median Sale Price
- Homeowner Vacancy Rates
- Homes For Sale
- County Property Tax as a Percent of Income
- County Property Tax as a Percent of Home Value
- Education Achievement Levels for High School
- Education Achievement Levels for Bachelor Degree
- Proposition 1 Yes Votes
- Proposition 1 Blank Votes
- County Healthcare Rankings
- Crime Statistics
- Natural Disasters
- Traffic Density
- Proximity & Distance Willing to Travel
- Trip Characteristics of Casino Visitors
- Distance From Existing Casinos
- Distance Between Existing Casinos and Proposed Counties
- Adaptive Re-use

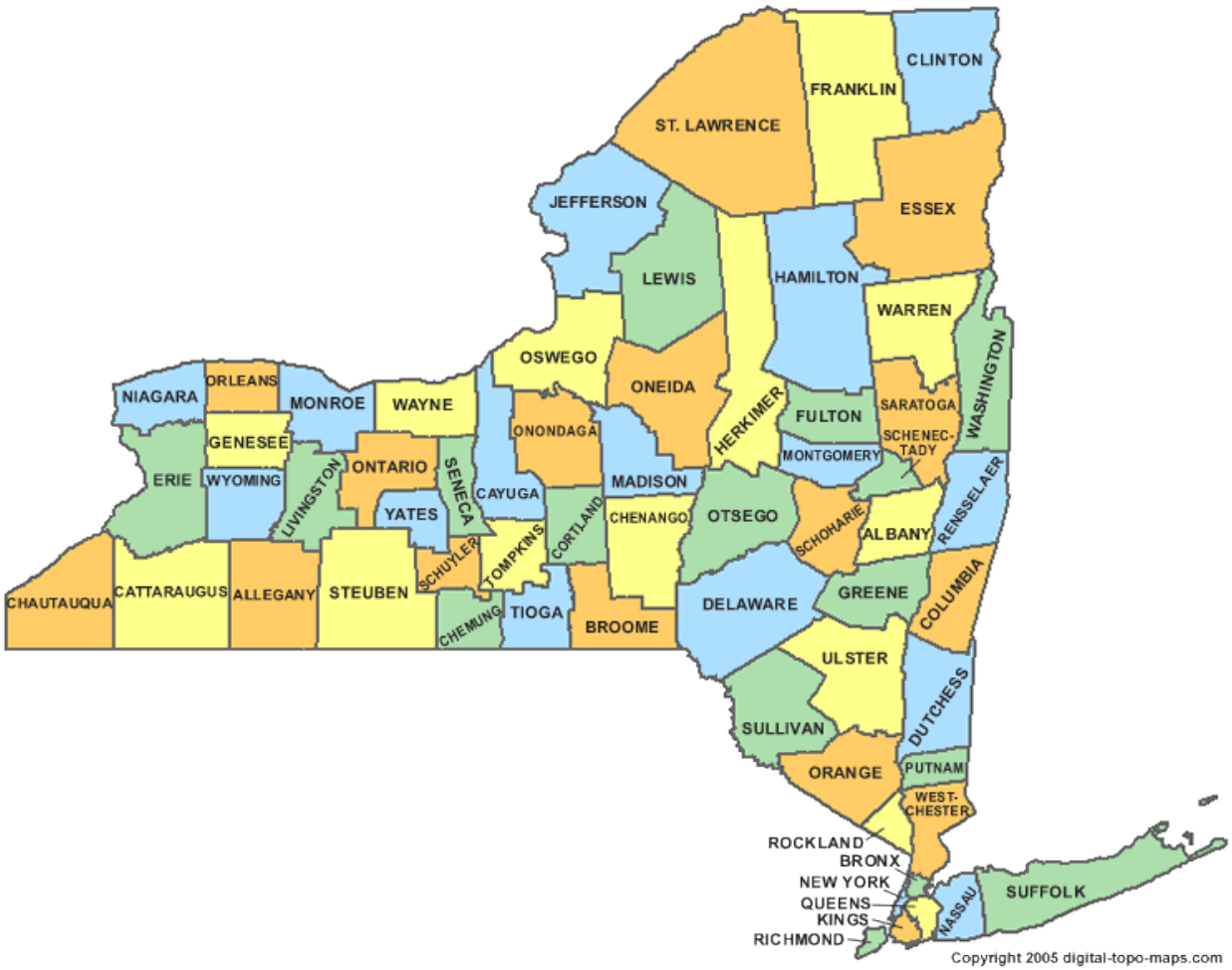
- Creation of a report that will include comparisons in as many of the above areas as possible.

Additional methodologies for specific sections of this study are contained in that section.

3. County Descriptions

This section is included to help those unfamiliar with each of the counties in this study. We have not included any information of our own; rather we have simply attached information taken from each county's website and the United States Census Quick Facts tables.

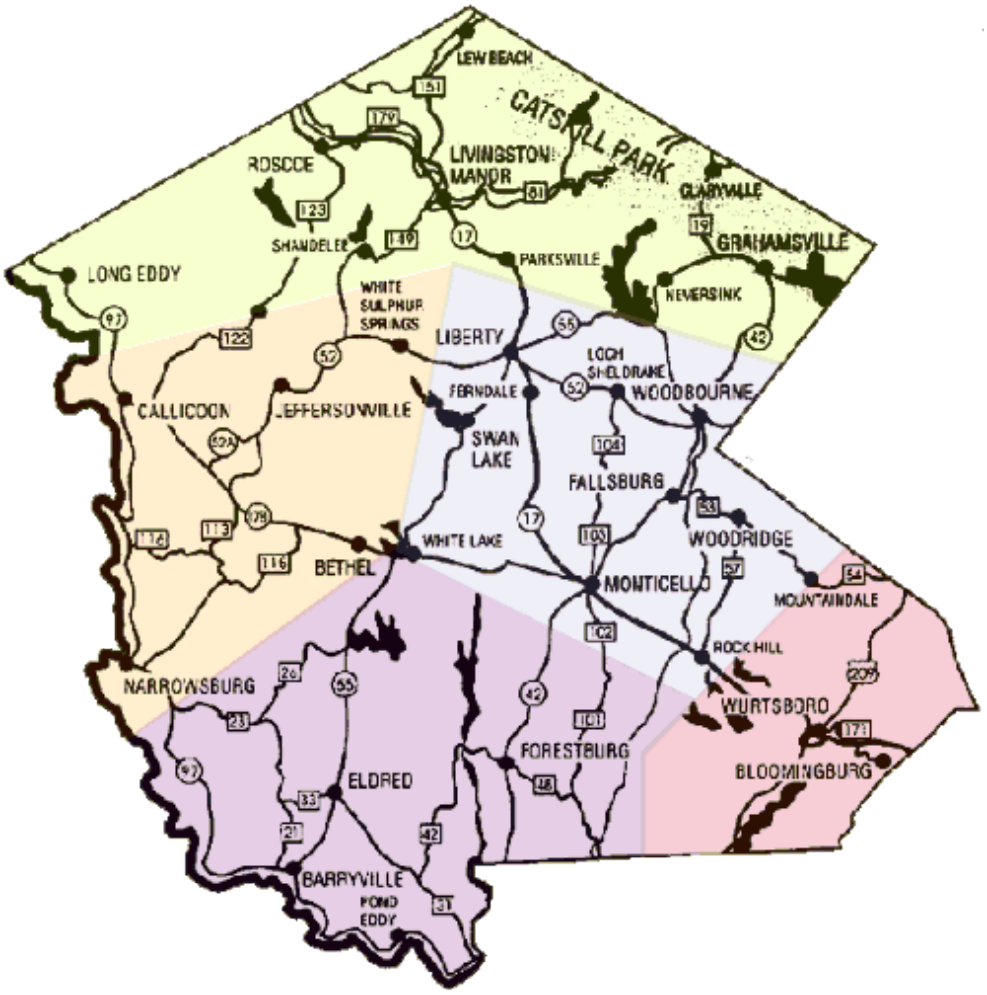
Figure 2 shows a breakdown of each county in New York State.



Sullivan County

From our earliest visitors and historic settlers to our newest investors and residents, Sullivan County was, and continues to be, recognized as a perfect place to live, work, play and raise a family. With a desirable location, highly educated work force, nationally recognized schools and pro-business environment, Sullivan County has it all.[2]

Figure 1 Sullivan County Map



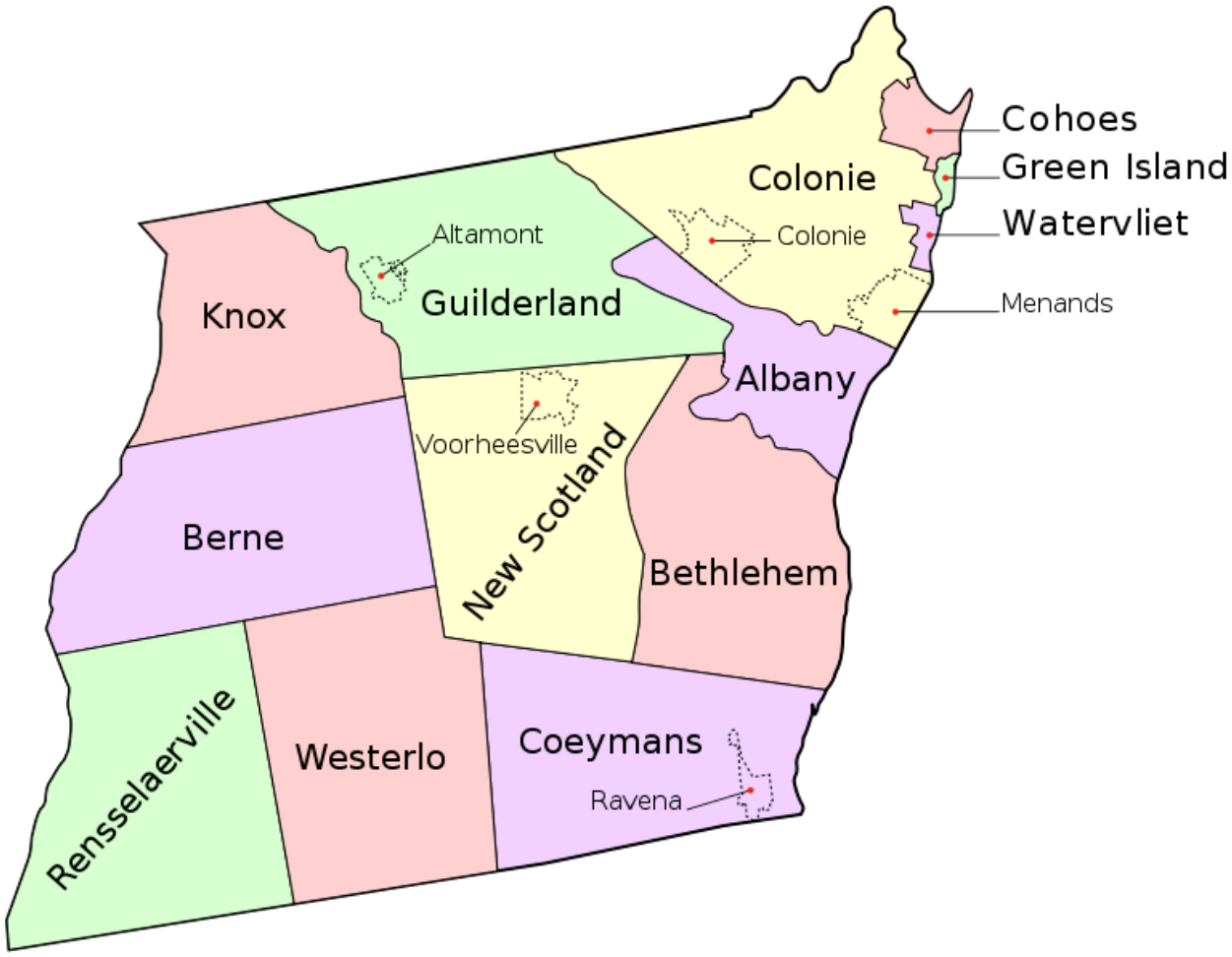
[2] http://co.sullivan.ny.us/Tabs/Visitors/tabid/3060/Default.aspx

Albany County

Albany County.com

About Albany County

From the Helderbergs to the shores of the mighty Hudson, Albany County is a unique blend of urban excitement and rural relations. It is the ideal place to live, work and raise a family. A trip through our 19 municipalities will impress you. Our villages, towns and cities are beautiful and they play host to the finest in food, lodging, shopping and entertainment. Whether you hike our trails, bike on our paths, visit our parks and museums or fish our streams and brooks, you will find it all here. Our current homepage background image (above) of a waterfall was taken in John Boyd Thacher State Park, Voorheesville.[3]



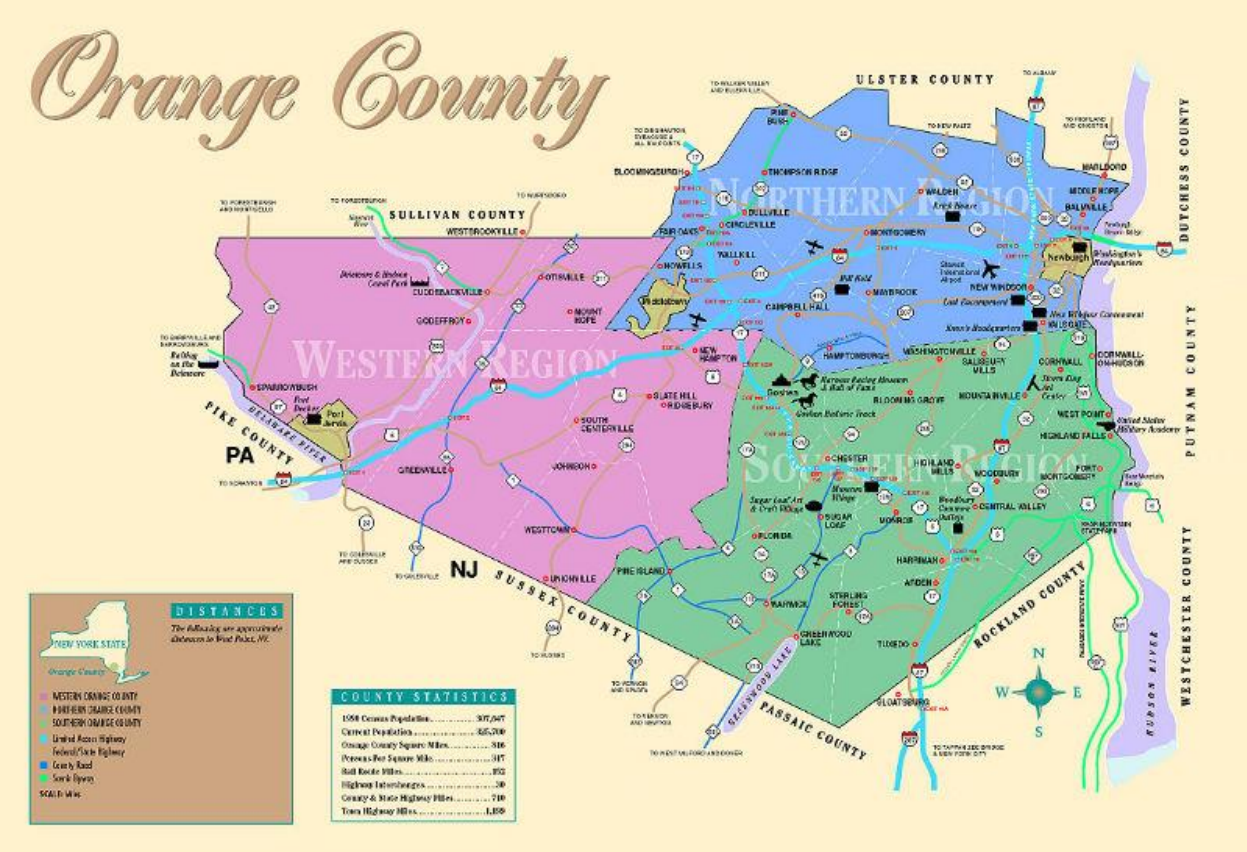
[3] http://www.albanycounty.com/Home.aspx

Orange County

ORANGE COUNTY
NEW YORK

About Orange County

Located just 40 miles from Manhattan, Orange County is one of the most attractive areas in the New York metropolitan area. Affordable housing, excellent school systems, a low crime rate, outstanding road, rail and air transportation, lack of congestion, and a wide range of recreational activities offer unique advantages for business and for living. Visit Orange County and see why so many people and businesses call it home.[4]



[4] http://www.co.orange.ny.us/

Saratoga County

With its friendly people, thriving tourism, and one of the lowest county tax rates in the state, Saratoga County is an excellent place to live, work and visit. We are proud of our strong commercial growth and a diverse local economy that ranges from Global Foundries, the largest high-tech economic development project in the country, to thriving family farms that are some of the best in Upstate New York.

Our cultural venues, excellent schools and colleges along with trails, parks and recreation programs make Saratoga County a great place to call home.[5]

[5] http://www.saratogacountyny.gov/

Tioga County

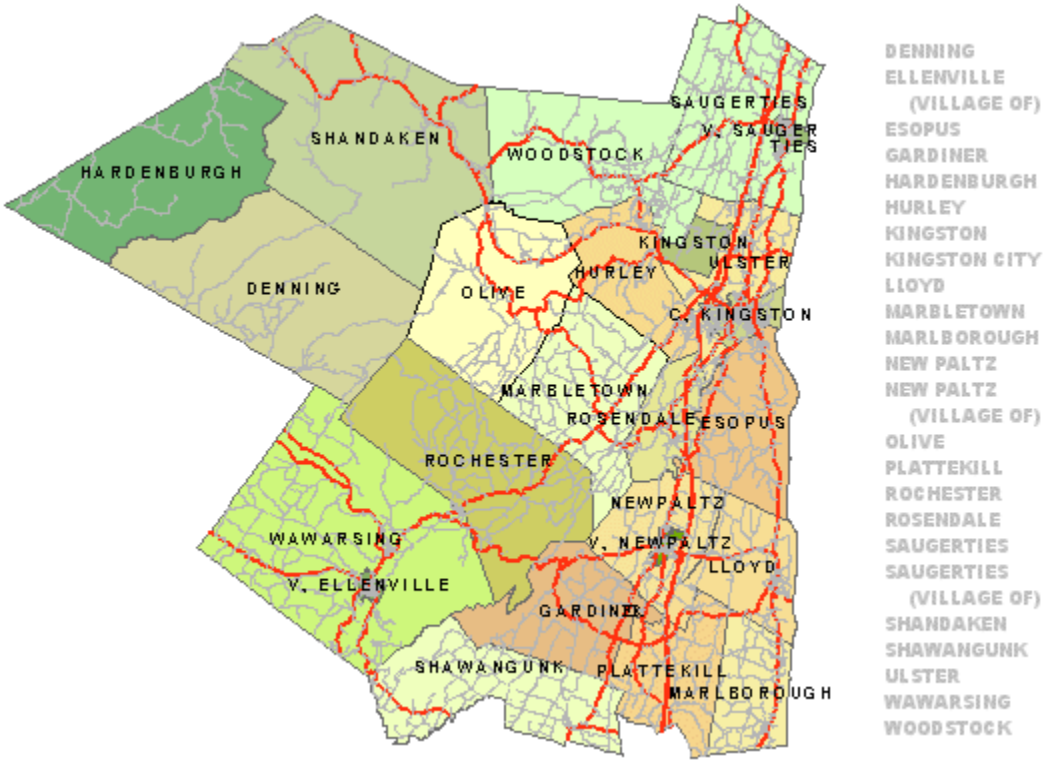
Welcome to the Tioga County Website. If you look closely you will find helpful and useful information on this site such as a Tioga County Directory of Departments, dates of committee meetings, a listing of your elected legislative representatives along with other important information. Contact information is also available for the state and federal elected officials. Please explore the site using the tabs along the top or via the dynamic menus in the "smart-phone" on the left. This information is intended to keep you up to date on county activities, issues and concerns.[6]

[6] http://www.tiogacountyny.com/

Ulster County

Ulster County
ulstercountyny.gov

Ulster County Executive Michael P. Hein is Ulster County's first County Executive. The passage of the Charter by the people of Ulster County created the elected office of County Executive, a post with the power and responsibility to lead that government.[7] [8]



[7] http://ulstercountyny.gov/
[8] https://www.facebook.com/pages/Office-of-the-Ulster-County-Executive/108553972524812

4. Job Growth

The objective of the Job Growth section is to determine which county's people will get the biggest increase in income from a casino. Based on the Marginal Propensity to Consume, those people will have a tendency to spend the most the fastest, providing the highest velocity of money and potentially stimulating the local and state economy more than another county's people.

As crucial components of this, adequacy and willingness (based on current incomes) of workers were also analyzed.

Unemployment Rates

The Local Area Unemployment Statistics (LAUS) program is a Federal-State cooperative effort in which monthly estimates of total employment and unemployment are prepared for approximately 7,300 areas including:

- Census regions and divisions
- States
- Metropolitan Statistical Areas and Metropolitan NECTAS (New England City and Town Areas)
- Metropolitan Divisions and NECTA Divisions
- Micropolitan Statistical Areas and Micropolitan NECTAs
- Combined Metropolitan Statistical Areas and Combined NECTAs
- Small Labor Market Areas
- Counties and county equivalents
- Cities of 25,000 population or more
- Cities and towns in New England regardless of population

These estimates are key indicators of local economic conditions. The Bureau of Labor Statistics (BLS) of the U.S. Department of Labor is responsible for the concepts, definitions, technical procedures, validation, and publication of the estimates that state employment security agencies prepare under agreement with BLS.

A wide variety of customers use these estimates. For example:

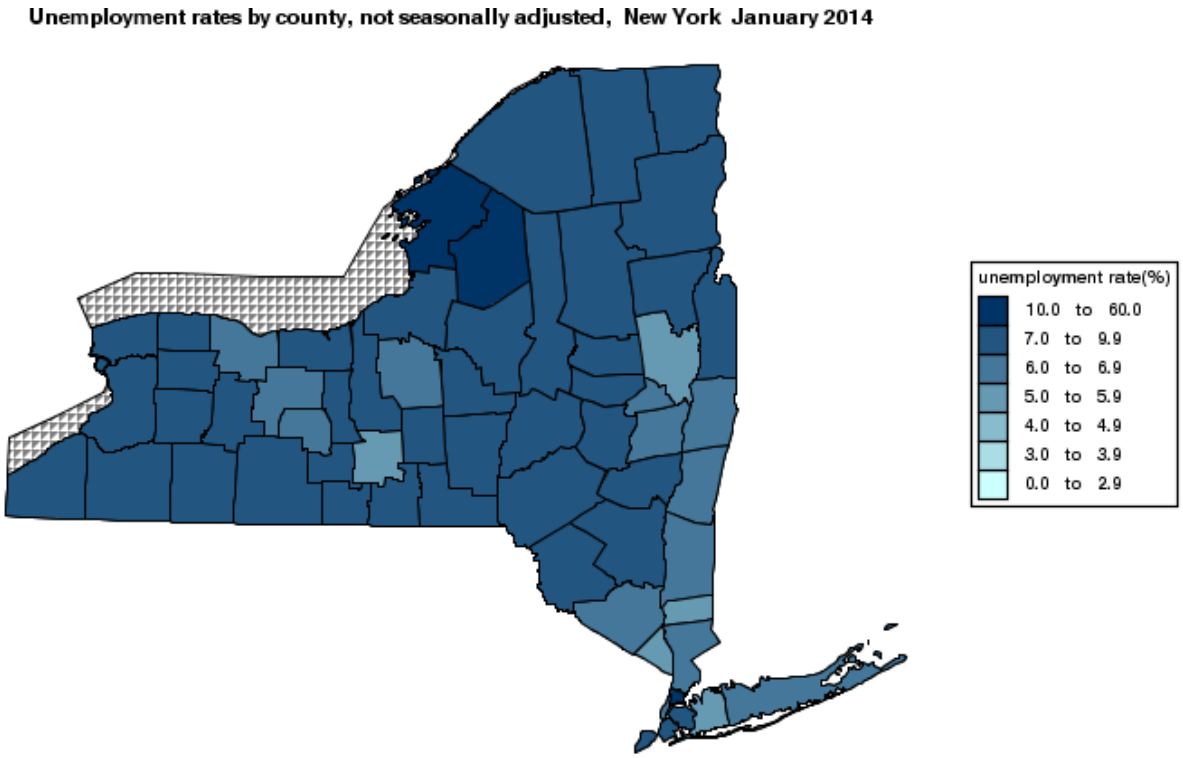
- Federal programs use the data for allocations to states and areas, as well as eligibility determinations for assistance.
- State and local governments use the estimates for planning and budgetary purposes and to determine the need for local employment and training services.
- Private industry, researchers, the media, and other individuals use the data to assess localized labor market developments and make comparisons across areas.

The concepts and definitions underlying LAUS data come from the Current Population Survey (CPS), the household survey that is the official measure of the labor force for the nation. State monthly model estimates are controlled in "real time" to sum to national monthly labor force

estimates from the CPS. These models combine current and historical data from the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance (UI) systems. Estimates for seven large areas and their respective balances of state are also model-based. Estimates for the remainder of the sub-state labor market areas are produced through a building-block approach known as the "Handbook method." This procedure also uses data from several sources, including the CPS, the CES program, State UI systems, and the decennial census, to create estimates that are adjusted to the statewide measures of employment and unemployment. Below the labor market area level, estimates are prepared using disaggregation techniques based on inputs from the decennial census, annual population estimates, and current UI data.

Seasonal Adjustment indicates the adjustment of time series data to eliminate the effect of intra-year variations which tend to occur during the same period on an annual basis (i.e., where U=Unadjusted and S=Seasonally Adjusted). Seasonal adjustment is a statistical technique which eliminates the influences of weather, holidays, the opening and closing of schools, and other recurring seasonal events from economic time series. This permits easier observation and analysis of cyclical, trend, and other non-seasonal movements in the data. By eliminating seasonal fluctuations, the series becomes smoother and it is easier to compare data from month to month.

Local Area Unemployment Statistics Map - Unemployment rates by county, not seasonally adjusted[9]



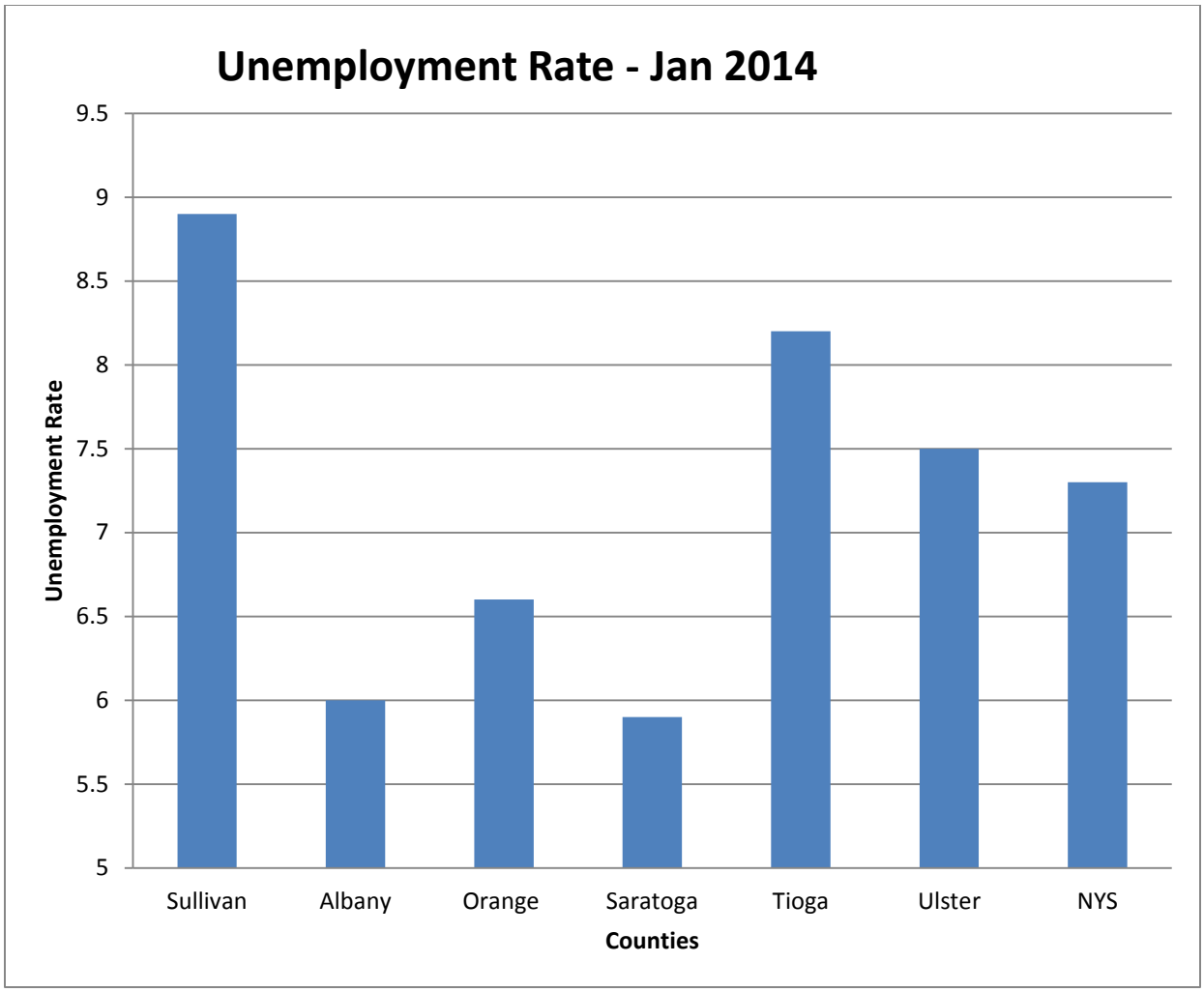
[9] http://data.bls.gov/map/MapToolServlet

County	January 2014
Bronx County	11.2
Lewis County	10.2
Jefferson County	10.0
Hamilton County	9.8
Orleans County	9.7
Oswego County	9.7
Saint Lawrence County	9.5
Essex County	9.4
Franklin County	9.3
Montgomery County	9.2
Schoharie County	9.2
Fulton County	9.1
Herkimer County	9.0
Sullivan County	8.9
Steuben County	8.8
Clinton County	8.7
Kings County	8.7
Wyoming County	8.7
Cortland County	8.5
Madison County	8.5
Warren County	8.4
Chautauqua County	8.3
Niagara County	8.3
Tioga County	8.2
Allegany County	8.1
Cattaraugus County	8.1
Delaware County	8.1
Schuyler County	8.1
Broome County	8.0
Chemung County	8.0
Livingston County	7.9
Greene County	7.8
Washington County	7.8
Wayne County	7.8
Cayuga County	7.6

Oneida County	7.6
Ulster County	7.5
Chenango County	7.4
Otsego County	7.4
Richmond County	7.4
Genesee County	7.3
Queens County	7.3
Erie County	7.2
Seneca County	7.1
Ontario County	6.9
Rensselaer County	6.8
Onondaga County	6.7
Yates County	6.7
Dutchess County	6.6
Monroe County	6.6
New York County	6.6
Orange County	6.6
Schenectady County	6.5
Columbia County	6.4
Suffolk County	6.2
Albany County	6.0
Westchester County	6.0
Saratoga County	5.9
Rockland County	5.6
Nassau County	5.5
Putnam County	5.4
Tompkins County	5.0

Unemployment Rate

Current Jan 2014	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Unemployment Rate	8.9	6	6.6	5.9	8.2	7.5	7.3



Differentials are used to show how high or low one piece of data is compared to another. The current differential compares the current (Jan 2014) unemployment rate of each county to the other 5. For instance, Sullivan Unemployment – Albany Unemployment/Albany Unemployment = the Sullivan Albany differential.

Current (Jan 2014) Unemployment Rate Differential

Avg Dif	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**NYS**
Sullivan	0.0%	48.3%	34.8%	50.8%	8.5%	18.7%	21.9%
Albany	-32.6%	0.0%	-9.1%	1.7%	-26.8%	-20.0%	-17.8%
Orange	-25.8%	10.0%	0.0%	11.9%	-19.5%	-12.0%	-9.6%
Saratoga	-33.7%	-1.7%	-10.6%	0.0%	-28.0%	-21.3%	-19.2%
Tioga	-7.9%	36.7%	24.2%	39.0%	0.0%	9.3%	12.3%
Ulster	-15.7%	25.0%	13.6%	27.1%	-8.5%	0.0%	2.7%
NYS	-18.0%	21.7%	10.6%	23.7%	-11.0%	-2.7%	0.0%

Sullivan County

Sullivan County has the highest current unemployment rate (8.9%) of the 6 counties in this study. It also has the 14th highest unemployment rate among the 62 counties in NY.

Sullivan County's current unemployment rate is:

48.3% higher than Albany County
34.8% higher than Orange County
50.8% higher than Saratoga County
8.5% higher than Tioga County
18.7% higher than Ulster County
21.9% higher than New York State

Of the 6 counties only Sullivan and Tioga have higher unemployment than the State of New York as a whole.

Albany County

Albany County has the 2nd lowest current unemployment rate (6%) next to Saratoga (5.9%).

Albany County's current unemployment rate is:

32.6% lower than Sullivan County
9.1% lower than Orange County
1.7% higher than Saratoga County
26.8% lower than Tioga County
20% lower than Ulster County
17.8% lower than New York State

Orange County

Orange County has the 3rd lowest current unemployment rate (6.6%) next to Albany (6%).

Orange County's current unemployment rate is:

25.8% lower than Sullivan County
10% higher than Albany
11.9% higher than Saratoga County
19.5% lower than Tioga County
12% lower than Ulster County
9.6% lower than New York State

Saratoga County

Saratoga County has the lowest current unemployment rate (5.9%) of the 6 counties in the study.

Saratoga County's current unemployment rate is:

33.7% lower than Sullivan County
1.7% lower than Albany
10.6% lower than Orange County
28% lower than Tioga County
23.1% lower than Ulster County
19.2% lower than New York State

Tioga County

Tioga County has the 2nd highest unemployment rate (8.2%) next to Sullivan (8.9%).

Tioga County's current unemployment rate is:

7.9% lower than Sullivan County
36.7% higher than Albany
24.2% higher than Orange County
39% higher than Saratoga County
9.3% higher than Ulster County
12.3% higher than New York State

Ulster County

Ulster County has the 3rd highest unemployment rate (7.5%) next to Sullivan (8.9%) and Tioga (8.2) %.

Ulster County's current unemployment rate is:

15.7% lower than Sullivan County
25% higher than Albany
13.6% higher than Orange County
27.1% higher than Saratoga County
8.5% lower than Tioga County
2.7% higher than New York State

Current Unemployment Rate - Section Conclusion

Current Unemployment Rank:
Sullivan 8.9%
Tioga 8.2%
Ulster 7.5%
Orange 6.6%
Albany 6%
Saratoga 5.9%

Of the 6 counties, Sullivan County has the highest current unemployment rate (8.9) and is 50.8% higher than the county with the lowest unemployment rate in the study, Saratoga (5.9).

Historical Unemployment Rates[10]

Department of Labor – Labor Statistics

Labor Force and Unemployment Data - Data for New York State, Labor Market Regions, Metropolitan Areas, Counties, and Municipalities of at least 25,000 Population.

Due to a new estimating methodology implemented in January 2005, sub-state labor force statistics from January 2000 to present are not comparable to data from earlier years. Questions regarding labor force statistics should be directed to your local labor market analyst.

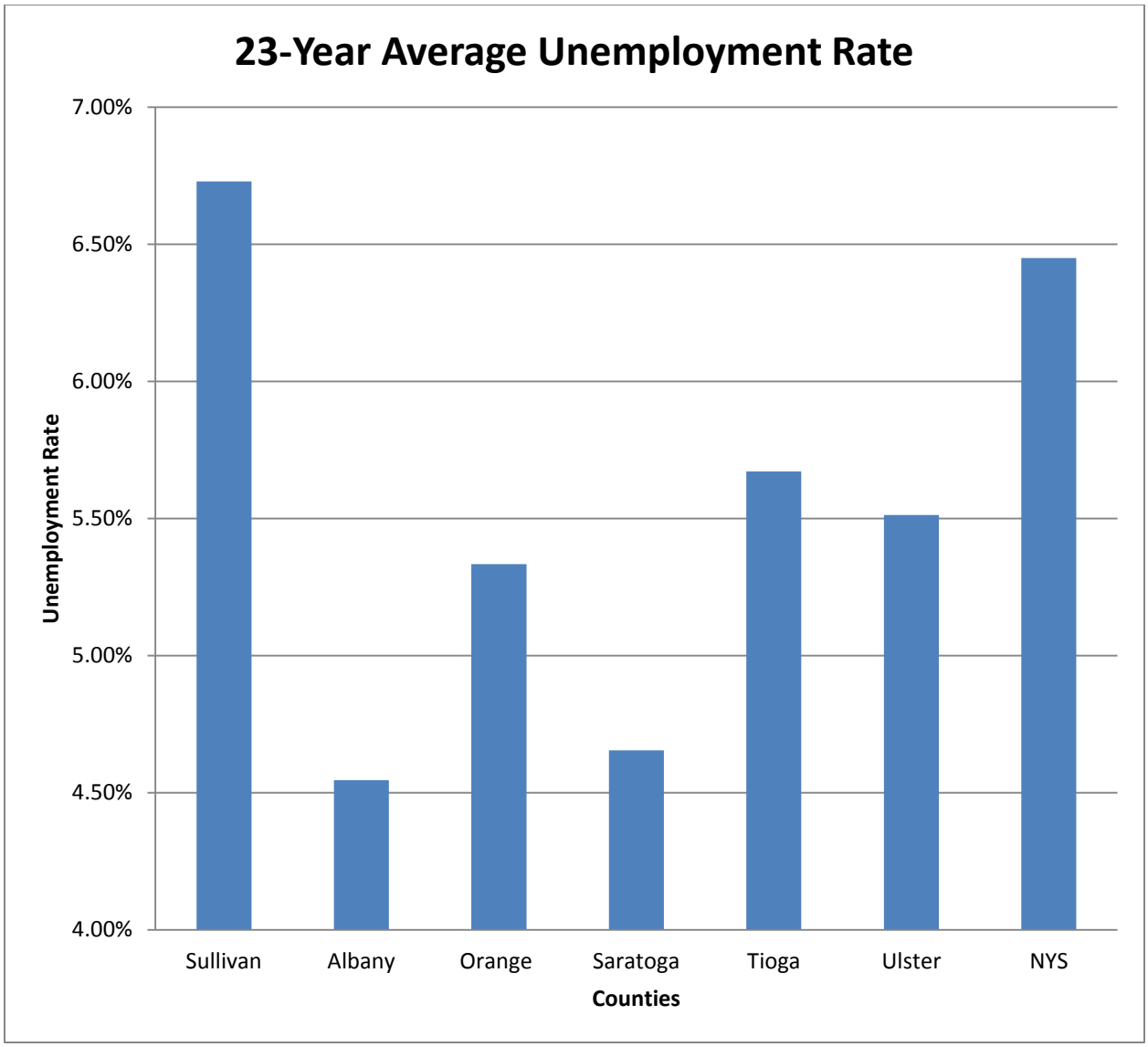
Labor force estimates provide the most up-to-date estimates of persons employed and unemployed by place of residence. Labor force data include estimates of the civilian labor force, the number employed, the number unemployed, and the unemployment rate. Labor force figures are available for New York State, labor market regions, metropolitan areas, counties, and municipalities of at least 25,000. Estimates are developed and distributed monthly. Labor force data for the nation and areas outside of New York State are available at http://www.bls.gov/lau/home.htm.

The entire set of currently available historical LAUS data are available by downloading the file, laus.zip. This compressed archive, which consists of five comma-separated-value (CSV) data files (laus_cities.txt, laus_counties.txt, laus_msas.txt, laus_regions.txt, laus_nys.txt) and a layout file (readme.txt), can be uncompressed with either the winzip or pkunzip utility programs. After extracting the files from the archive, they may be imported into a spreadsheet application. The text and data should parse automatically into columns.

[10] http://www.labor.ny.gov/stats/lslaus.shtm

Year	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
2013	8.70%	6.30%	7.20%	5.90%	7.80%	7.80%	7.70%
2012	9.60%	7.40%	8.30%	7.00%	8.40%	8.80%	8.50%
2011	9.20%	7.20%	8.00%	6.70%	8.20%	8.30%	8.20%
2010	9.30%	7.10%	8.30%	6.90%	8.20%	8.20%	8.60%
2009	8.80%	6.90%	7.90%	6.40%	8.20%	7.80%	8.30%
2008	6.50%	4.90%	5.40%	4.60%	5.30%	5.50%	5.40%
2007	5.30%	3.90%	4.40%	3.70%	4.80%	4.40%	4.60%
2006	5.20%	3.90%	4.30%	3.60%	4.40%	4.20%	4.60%
2005	4.90%	4.00%	4.30%	3.70%	4.80%	4.40%	5.00%
2004	5.30%	4.20%	4.70%	3.90%	5.20%	4.90%	5.80%
2003	5.30%	4.30%	4.70%	4.00%	5.70%	4.60%	6.40%
2002	5.00%	4.00%	4.40%	3.90%	5.50%	4.40%	6.20%
2001	4.60%	3.40%	3.70%	3.40%	4.10%	3.80%	4.90%
2000	4.30%	3.30%	3.40%	3.30%	3.40%	3.60%	4.50%
1999	5.80%	2.90%	3.70%	3.30%	3.80%	3.60%	5.20%
1998	6.20%	3.00%	3.50%	3.50%	3.80%	3.50%	5.70%
1997	6.50%	3.40%	4.20%	3.90%	4.00%	4.20%	6.50%
1996	6.50%	3.80%	4.30%	4.40%	4.70%	4.50%	6.30%
1995	6.30%	4.20%	4.90%	4.70%	5.60%	5.40%	6.40%
1994	7.50%	4.10%	5.40%	4.80%	6.80%	6.60%	6.90%
1993	8.20%	4.20%	6.00%	5.00%	6.40%	7.40%	7.90%
1992	9.10%	5.00%	6.50%	5.90%	6.70%	6.70%	8.60%
1991	8.30%	4.80%	6.20%	5.60%	6.00%	6.10%	7.30%
1990	5.10%	2.90%	4.30%	3.60%	4.30%	3.60%	5.30%
Average	6.73%	4.55%	5.33%	4.65%	5.67%	5.51%	6.45%

The average 23-year unemployment rate was derived by averaging the unemployment rates from 1990 to 2013.



Average 23-year Unemployment Rate Differential

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	48.0%	26.2%	44.6%	18.7%	22.1%	4.3%
Albany	-32.4%	0.0%	-14.8%	-2.3%	-19.8%	-17.5%	-29.5%
Orange	-20.7%	17.3%	0.0%	14.6%	-6.0%	-3.3%	-17.3%
Saratoga	-30.8%	2.4%	-12.7%	0.0%	-17.9%	-15.6%	-27.8%
Tioga	-15.7%	24.7%	6.3%	21.8%	0.0%	2.9%	-12.1%
Ulster	-18.1%	21.3%	3.4%	18.4%	-2.8%	0.0%	-14.5%
NYS	-4.1%	41.9%	20.9%	38.6%	13.7%	17.0%	0.0%

Sullivan

Sullivan County's lowest historical unemployment rate was 4.30% in 2000. Its highest rate was 9.60% in 2012. The average unemployment rate for the 23 years was 6.73%.

Sullivan County's historic 23-year average unemployment rate is:

48% higher than Albany County
26.2% higher than Orange County
44.6% higher than Saratoga County
18.7% higher than Tioga County
22.1% higher than Ulster County
4.3% higher than New York State

Albany

Albany County's lowest historical unemployment rate was 2.90% in 1990 and again in 1999. Its highest rate was 7.40% in 2012. The average unemployment rate for the 23 years was 4.55%.

Albany County's historic 23-year average unemployment rate is:

32.4% lower than Sullivan County
14.8% lower than Orange County
2.3% lower than Saratoga County
19.8% lower than Tioga County
17.5% lower than Ulster County
29.5% lower than New York State

Orange

Orange County's lowest historical unemployment rate was 3.5% in 1998. Its highest rate was 8.3% in 2010 and again in 2012. The average unemployment rate for the 23 years was 5.33%.

Orange County's historic 23-year average unemployment rate is:

20.7% lower than Sullivan County
17.3% higher than Albany County
14.6% higher than Saratoga County
6% lower than Tioga County
3.3% lower than Ulster County
17.3% lower than New York State

Saratoga

Saratoga County's lowest historical unemployment rate was 3.30% in 1999 and again in 2000. Its highest rate was 7% in 2012. The average unemployment rate for the 23 years was 4.65%.

Saratoga County's historic 23-year average unemployment rate is:

30.8% lower than Sullivan County
2.4% higher than Albany County
12.7% lower than Orange County
17.9% lower than Tioga County
15.6% lower than Ulster County
27.8% lower than New York State

Tioga

Tioga County's lowest historical unemployment rate was 3.4% in 2000. Its highest rate was 8.4% in 2012. The average unemployment rate for the 23 years was 5.67%.

Tioga County's historic 23-year average unemployment rate is:

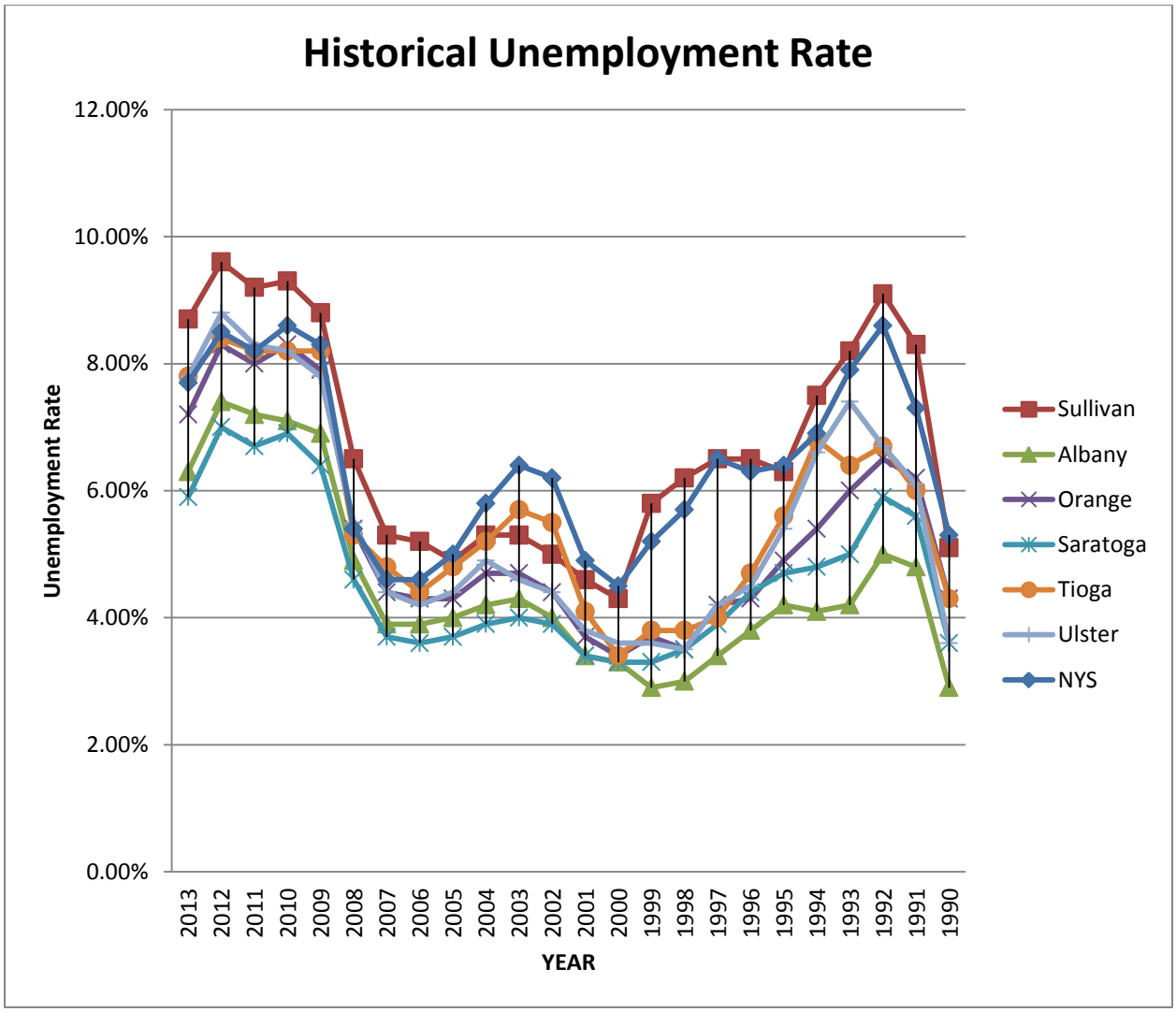
15.7% lower than Sullivan County
24.7% higher than Albany County
3.4% higher than Orange County
21.8% higher than Saratoga County
21.9% higher than Ulster County
12.1% lower than New York State

Ulster

Ulster County's lowest historical unemployment rate was 3.5% in 1998. Its highest rate was 8.8% in 2012. The average unemployment rate for the 23 years was 5.51%.

Ulster County's historic 23-year average unemployment rate is:

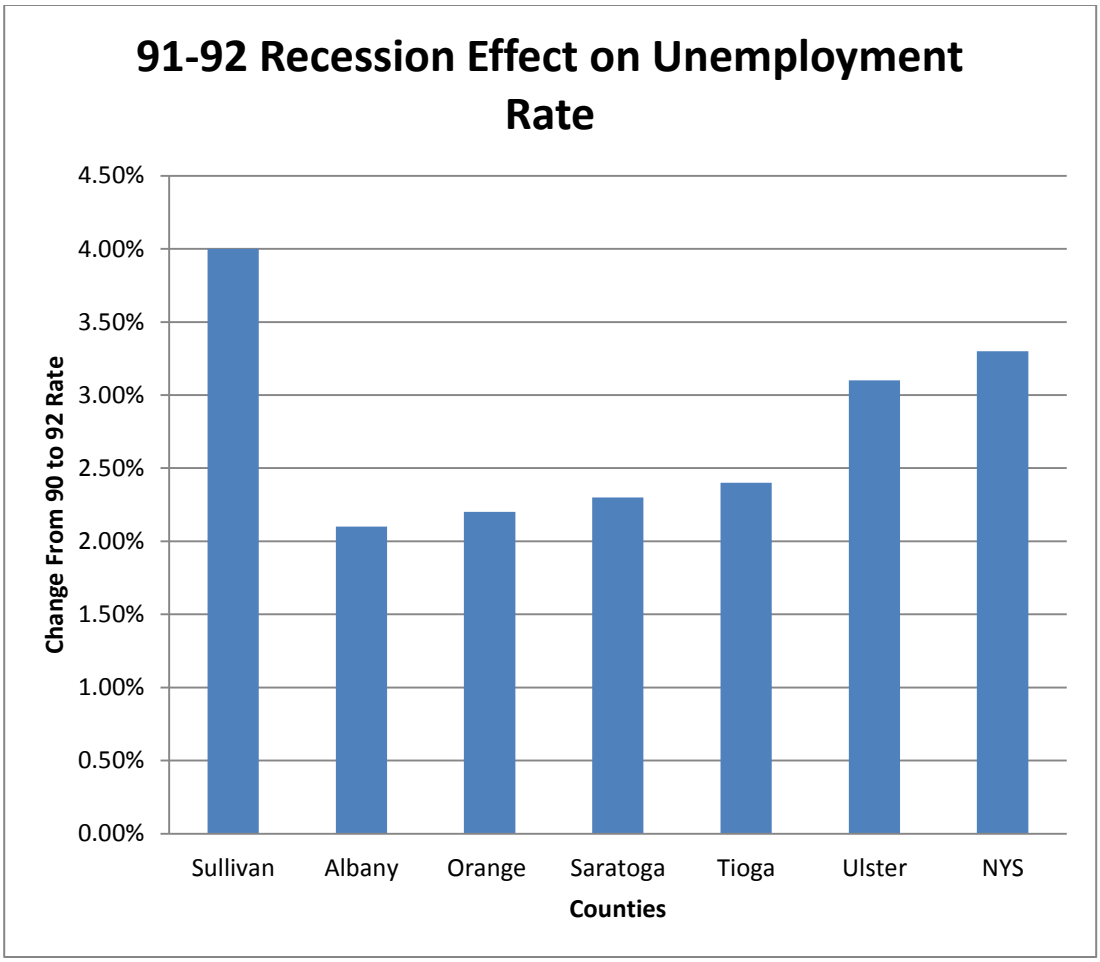
18.1% lower than Sullivan County
21.3% higher than Albany County
6.3% higher than Orange County
18.4% higher than Saratoga County
2.8% lower than Tioga County
14.5% lower than New York State



In periods of low unemployment such as 1990, 2000, and 2005 the spread, or relative difference between the 6 counties and New York State is significantly smaller than years of high unemployment such as 1992 and 2012. Using Albany County and Saratoga County as the historical and consistent best (low unemployment), Sullivan and the State of New York clearly suffer to a higher degree during bad times as illustrated by the more than 4% spread between Albany and Sullivan in 1992 and the 2.6% spread between Saratoga and Sullivan in 2012.

1991 – 1992 Recession

The 1991 – 1992 recession was interesting enough to parse out from the historical unemployment data. The chart below shows the difference between 1990 unemployment rates and 1992 rates when the recession topped out for most areas of New York. For instance 9.10% in 1992 minus 5.10% in 1990 equals 4%.



1991-1992 Recession Differentials

92-90	4.00%	2.10%	2.20%	2.30%	2.40%	3.10%	3.30%
Avg Dif	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**NYS**
Sullivan	0.0%	90.5%	81.8%	73.9%	66.7%	29.0%	21.2%
Albany	-47.5%	0.0%	-4.5%	-8.7%	-12.5%	-32.3%	-36.4%
Orange	-45.0%	4.8%	0.0%	-4.3%	-8.3%	-29.0%	-33.3%
Saratoga	-42.5%	9.5%	4.5%	0.0%	-4.2%	-25.8%	-30.3%
Tioga	-40.0%	14.3%	9.1%	4.3%	0.0%	-22.6%	-27.3%
Ulster	-22.5%	47.6%	40.9%	34.8%	29.2%	0.0%	-6.1%
NYS	-17.5%	57.1%	50.0%	43.5%	37.5%	6.5%	0.0%

Sullivan County also was the hardest hit during the 1991-1992 recession, dropping 4% over the two years.

Sullivan County's drop during this recession was:

90% higher than Albany County
81.8% higher than Orange County
73.9% higher than Saratoga County
66.7% higher than Tioga County
29% higher than Ulster County
21.2% higher than New York State

Historic Unemployment - Section Conclusion

Historic Unemployment Rank:
Sullivan 6.73%
Tioga 5.67%
Ulster 5.51%
Orange 5.33%
Saratoga 4.65%
Albany 4.55%

Of the 6 counties, Sullivan County has the highest 23-year historical unemployment rate, which is almost double that of Saratoga and Albany Counties.

Sullivan is also affected disproportionately poorly during times of high unemployment.

Current & Historical Labor Force

Department of Labor – Labor Statistics[11]

Labor Force and Unemployment Data - Data for New York State, Labor Market Regions, Metropolitan Areas, Counties, and Municipalities of at least 25,000 Population.

Due to an estimating methodology implemented in January 2005, sub-state labor force statistics from January 2000 to present are not comparable to data from earlier years. Questions regarding labor force statistics should be directed to your local labor market analyst.

Labor force estimates provide the most up-to-date estimates of persons employed and unemployed by place of residence. Labor force data include estimates of the civilian labor force, the number employed, the number unemployed, and the unemployment rate. Labor force figures are available for New York State, labor market regions, metropolitan areas, counties and municipalities of at least 25,000. Estimates are developed and distributed monthly. Labor force data for the nation and areas outside of New York State are available at http://www.bls.gov/lau/home.htm.

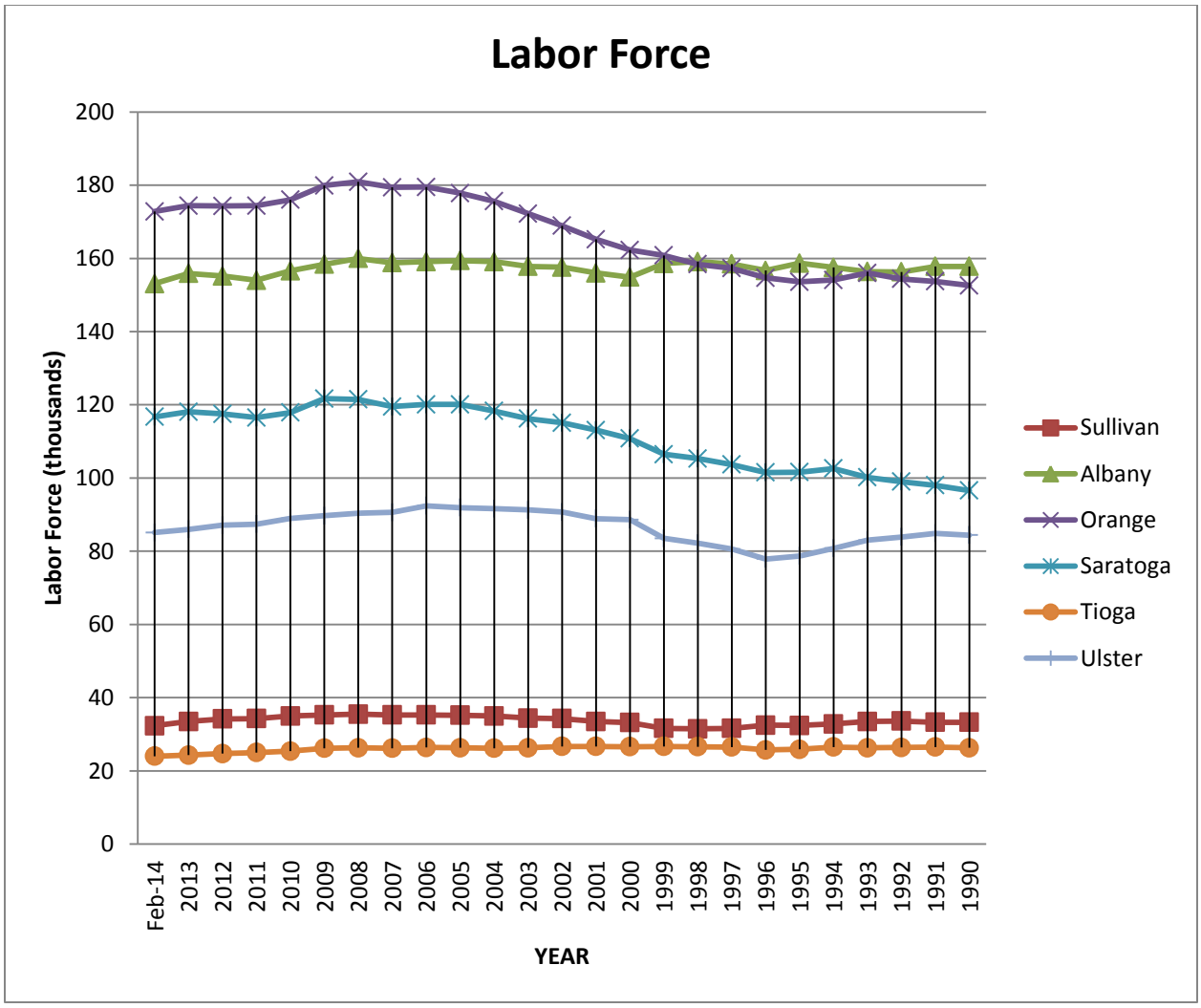
The entire set of currently available historical LAUS data are available by downloading the file,

[11] http://www.labor.ny.gov/stats/lslaus.shtm

laus.zip. This compressed archive, which consists of five comma-separated-value (CSV) data files (laus_cities.txt, laus_counties.txt, laus_msas.txt, laus_regions.txt, laus_nys.txt) and a layout file (readme.txt), can be uncompressed with either the winzip or pkunzip utility programs. After extracting the files from the archive, they may be imported into a spreadsheet application. The text and data should parse automatically into columns.

NYS Department of Labor - Labor Force (thousands)

Year	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Feb-14	32.3	153.1	172.8	116.7	24	85.1	9,593.40
2013	33.5	155.9	174.4	118.1	24.3	86	9,636.00
2012	34.2	155.2	174.3	117.5	24.7	87.1	9,620.90
2011	34.3	154	174.4	116.5	25	87.4	9,541.70
2010	35	156.6	176	117.9	25.4	89	9,594.20
2009	35.3	158.4	179.9	121.7	26.2	89.7	9,638.30
2008	35.5	160	180.9	121.5	26.3	90.4	9,629.20
2007	35.3	158.8	179.4	119.5	26.2	90.6	9,532.10
2006	35.3	159.1	179.5	120.1	26.4	92.4	9,499.90
2005	35.2	159.4	177.8	120.1	26.3	91.9	9,421.40
2004	35	159.1	175.6	118.3	26.2	91.6	9,360.10
2003	34.4	157.8	172.2	116.2	26.3	91.3	9,299.00
2002	34.3	157.6	168.9	115.1	26.7	90.7	9,299.00
2001	33.5	156	165.2	113.1	26.7	88.9	9,193.30
2000	33.2	154.9	162.3	110.8	26.6	88.6	9,167.00
1999	31.6	158.6	160.8	106.5	26.7	83.5	9,134.10
1998	31.5	159.1	158.4	105.3	26.6	82.2	9,058.80
1997	31.6	158.5	157.3	103.7	26.5	80.6	8,997.50
1996	32.5	156.7	154.7	101.5	25.7	77.9	8,780.50
1995	32.4	158.7	153.6	101.6	25.9	78.7	8,676.80
1994	32.8	157.5	154.1	102.6	26.5	80.8	8,682.00
1993	33.5	156.4	156	100.2	26.3	83	8,698.90
1992	33.6	156.3	154.4	99	26.4	83.9	8,734.90
1991	33.3	157.8	153.7	98	26.5	84.9	8,754.70
1990	33.3	157.8	152.6	96.6	26.3	84.4	8,808.90
Average	**33.7**	**157.3**	**166.8**	**111.1**	**26.0**	**86.4**	**9214.1**
Current vs. Avg	**-1.4**	**-4.2**	**6.0**	**5.6**	**-2.0**	**-1.3**	**379.3**



Differentials are used to show a how high or low one piece of data is compared to another. The current differential compares the current (Feb 2014) labor force of each county to the other 5. For instance, Sullivan Labor – Albany Labor/Albany Labor = the Sullivan Albany differential.

Current Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
Sullivan	0.0%	-78.9%	-81.3%	-72.3%	34.6%	-62.0%
Albany	374.0%	0.0%	-11.4%	31.2%	537.9%	79.9%
Orange	435.0%	12.9%	0.0%	48.1%	620.0%	103.1%
Saratoga	261.3%	-23.8%	-32.5%	0.0%	386.3%	37.1%
Tioga	-25.7%	-84.3%	-86.1%	-79.4%	0.0%	-71.8%
Ulster	163.5%	-44.4%	-50.8%	-27.1%	254.6%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the 2nd lowest labor force (32,300) next to Tioga (24,000).

Sullivan County's current labor force is:

78.9% lower than Albany County
81.3% lower than Orange County
72.3% lower than Saratoga County
34.6% higher than Tioga County
62.0% lower than Ulster County
99.7% lower than New York State

Albany County

Albany County has the 2nd highest labor force (153,100) next to Orange (172,800).

Albany County's current labor force is:

374.0% higher than Sullivan County
11.4% lower than Orange County
31.2% higher than Saratoga County
537.9% higher than Tioga County
79.9% higher than Ulster County

Orange County

Orange County has the highest current labor force (173,800) of the 6 counties in the study.

Orange County's current labor force is:

435% higher than Sullivan County
2.9% higher than Albany
48.1% higher than Saratoga County
620% higher than Tioga County
103.1% higher than Ulster County

Saratoga County

Saratoga County has the 3rd highest current labor force (116,700) of the 6 counties in the study.

Saratoga County's current labor force is:
- 261.3% higher than Sullivan County
- 23.8% lower than Albany
- 32.5% lower than Orange County
- 386.3% higher than Tioga County
- 37.1% higher than Ulster County

Tioga County

Tioga County has the lowest current labor force (24,000) of the 6 counties in the study.

Tioga County's current labor force is:
- 25.7% lower than Sullivan County
- 84.3% lower than Albany
- 86.1% lower than Orange County
- 79.4% lower than Saratoga County
- 71.8% lower than Ulster County

Ulster County

Ulster County has the 3rd lowest labor force (85,100) next to Sullivan (32,300) and Tioga (24,000).

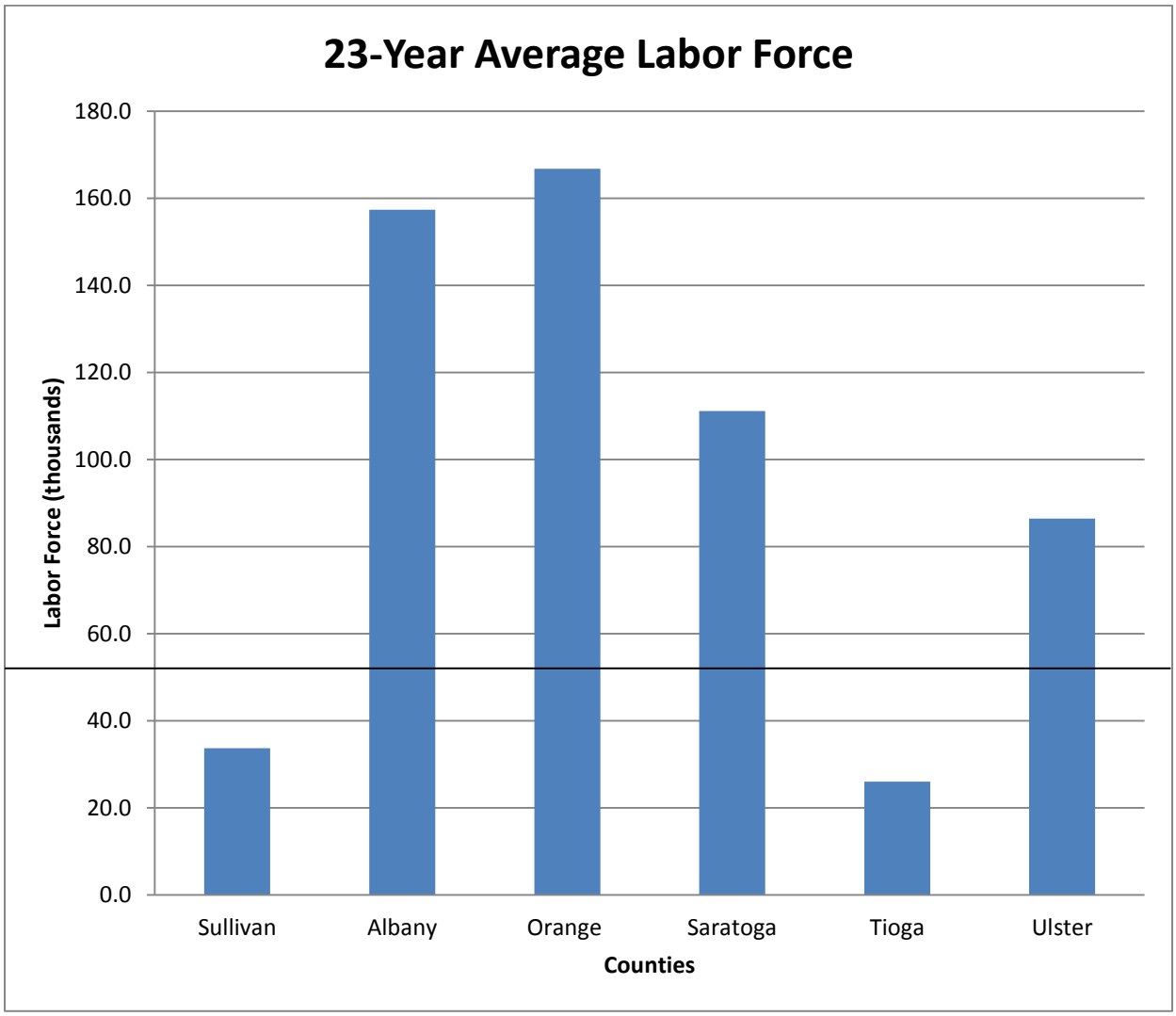
Ulster County's current labor force is:
- 163.5% higher than Sullivan County
- 44.4% lower than Albany
- 50.8% lower than Orange County
- 27.1% lower than Saratoga County
- 254.6% higher than Tioga Count

Historical Labor Force

This section attempts to show a historical perspective of labor force via a 23-year average.

NYS Department of Labor - Labor Force (thousands)

Year	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
23-Year Average	33.7	157.3	166.8	111.1	26.0	86.4



23-year average differentials

Avg Dif	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
Sullivan	0.0%	-78.6%	-79.8%	-69.7%	29.5%	-61.0%
Albany	366.9%	0.0%	-5.7%	41.6%	504.5%	82.0%
Orange	394.9%	6.0%	0.0%	50.1%	540.7%	93.0%
Saratoga	229.8%	-29.4%	-33.4%	0.0%	326.9%	28.6%
Tioga	-22.8%	-83.5%	-84.4%	-76.6%	0.0%	-69.9%
Ulster	156.5%	-45.1%	-48.2%	-22.2%	232.0%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the 2nd lowest 23-year average labor force (33,700) next to Tioga (26,000).

Sullivan County's historic 23-year average labor force is:

78.6% lower than Albany County
79.8% lower than Orange County
69.7% lower than Saratoga County
29.5% higher than Tioga County
61.0% lower than Ulster County

Albany County

Albany County has the 2nd highest 23-year average labor force (157,300) next to Orange (166,800).

Albany County's 23-year average labor force is:

366.9% higher than Sullivan County
5.7% lower than Orange County
41.6% higher than Saratoga County
504.5% higher than Tioga County
82.0% higher than Ulster County

Orange County

Orange County has the highest 23-year average labor force (166,800) of the 6 counties in the study.

Orange County's 23-year average labor force is:

394.9% higher than Sullivan County
6.0% higher than Albany
50.1% higher than Saratoga County
540.7% higher than Tioga County
93.0% higher than Ulster County

Saratoga County

Saratoga County has the 3rd highest 23-year average labor force (111,100) of the 6 counties in the study.

Saratoga County's 23-year average labor force is:
- 229.8% higher than Sullivan County
- 29.4% lower than Albany
- 33.4% lower than Orange County
- 326.9% higher than Tioga County
- 28.6% higher than Ulster County

Tioga County

Tioga County has the lowest 23-year average labor force (26,000) of the 6 counties in the study.

Tioga County's 23-year average labor force is:
- 22.8% lower than Sullivan County
- 83.5% lower than Albany
- 84.4% lower than Orange County
- 76.6% lower than Saratoga County
- 69.9% lower than Ulster County

Ulster County

Ulster County has the 3rd lowest 23 year average labor force (86,400) next to Sullivan (33,700) and Tioga (26,000).

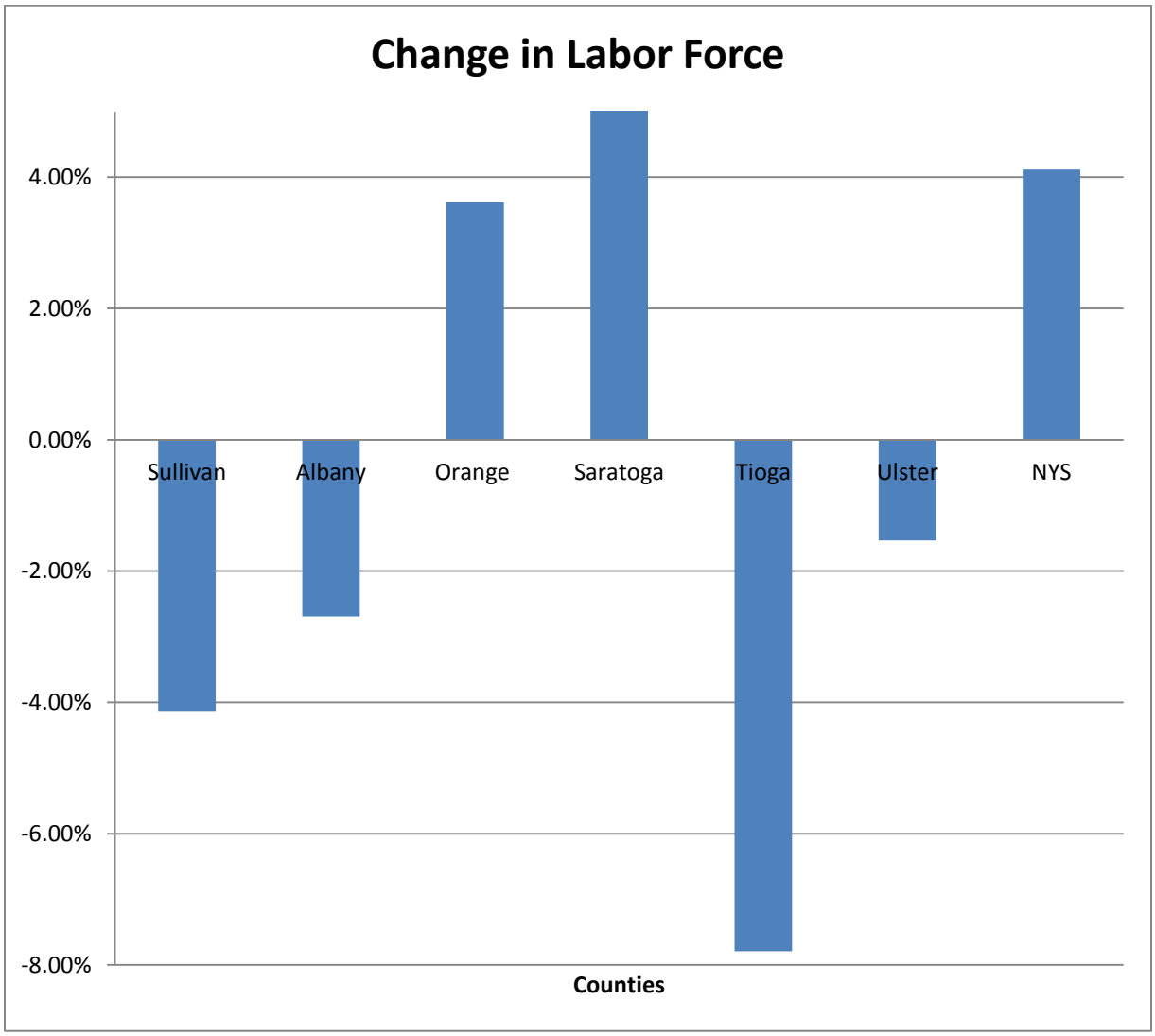
Ulster County's 23-year average labor force is:
- 156.5% higher than Sullivan County
- 45.1% lower than Albany
- 48.2% lower than Orange County
- 22.2% lower than Saratoga County
- 232.0% higher than Tioga County

Change in Labor Force

This section compares the 23-year average labor force to the current February 2014 labor force according to the New York State Department of Labor. The "current vs. 23-year average" shows the change in how many workers each county has now vs. the 23-year average base line. "As a %" shows that change as a percentage of current labor force and is intended to illustrate an overall growth or decline of labor force.

NYS Department of Labor - Labor Force (thousands)

Year	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Current Feb-14	32.3	153.1	172.8	116.7	24	85.1	9593.4
23-year Average	33.7	157.3	166.8	111.1	26.0	86.4	9214.1
Current vs. 23-year Average	-1.4	-4.2	6.0	5.6	-2.0	-1.3	379.3
As a %	-4%	-3%	4%	5%	-8%	-2%	4%



Sullivan County

Of the 6 counties in this study, Sullivan County (-4.14%) had the 2nd biggest decline in the percentage of their labor force, losing a net 1,400 between 1990 and February 2014 next to Tioga County (-7.79) that lost 1,300.

Albany County

Albany County (-2.69%) declined 3rd most in percentage of their labor force losing 4,200 between 1990 and February 2014.

Orange County

Orange County (+3.62%) had the 2nd biggest growth in percentage of their labor force growing 6,000 between 1990 and February 2014.

Saratoga County

Of the 6 counties in the study, Saratoga County (+5.02%) grew the most in percentage of their labor force increasing 5,600 between 1990 and February 2014.

Tioga County

Tioga County (-7.79%) declined the most in percentage of their labor force 2,000 between 1990 and February 2014.

Ulster County

Ulster County (-1.53%) had the 4th biggest decline in percentage of their labor force, losing 1,300 between 1990 and February 2014.

Current & Historical Labor Force - Section Conclusion

Labor Force Growth/Decline Rank:
Tioga -7.79%
Sullivan -4.14%
Albany -2.69%
Ulster -1.53%
Orange +3.62%
Saratoga +5.02%

Of the 6 counties in this study, Sullivan County (-4.14%) had the 2nd biggest decline in the percentage of their labor force, losing a net 1,400 between 1990 and February 2014.

Between 1990 and February 2014, Tioga, Sullivan, Albany, and Ulster County's labor force shrunk by 7.79%, 4.14%, 2.69%, and 1.53% respectively. Orange and Saratoga County's labor force grew during this same period by 3.62% and 5.02% respectively.

Sullivan County was famous for a half-dozen large resorts in the 1950's, some of which didn't close until the late 1990's[12]. Although it is very difficult to statistically define using current available data sets, it would be reasonable to assume that a large portion of the labor force has some hospitality experience on their resumes. The high and steady county unemployment rate might indicate a high percentage of the unemployed workforce has hospitality experience.

Factoring change in labor force alone, it is reasonable to assume that counties like Orange and Saratoga have grown over the last 23-years and will continue to grow without a casino; while the counties of Tioga, Sullivan, Albany and Ulster have lost labor force and might benefit from casinos.

Labor Force Participation Rate

Definition of 'Participation Rate

A measure of the active portion of an economy's labor force. The participation rate refers to the number of people who are either employed or are actively looking for work. The number of people who are no longer actively searching for work would not be included in the participation rate. During an economic recession, many workers often get discouraged and stop looking for employment, as a result, the participation rate decreases.

The participation rate is an important metric to note when looking at unemployment data because unemployment figures reflect the number of people who are looking for jobs but are unable to secure employment.

The participation rate is important in analyzing the unemployment rate. Those who have no interest in working are not included in the participation rate but are included in the unemployment rate. An aging population can have both a positive and negative effect on the participation rate, through retirement and new people entering the workforce. The participation rate and unemployment data should be observed in tandem to give a better understanding of the overall employment status.[13]

Labor Force Participation and the Impact of Discouraged Workers
Posted: January 13, 2012
By Brad R. Watts

Although the nation's unemployment rate remains relatively high, one factor that has kept it from being even higher has been a decline in the participation rate. For example, according to data from the Bureau of Labor Statistics Current Population Survey (Household Data, Table B), in December the U.S. unemployment rate declined to 8.5 percent, which was a result of both a 176,000 increase in employment and a 50,000 decrease in the size of the civilian labor force during the month.

Some of the decrease in labor force participation has certainly been the prevalence of discouraged

[12] http://en.wikipedia.org/wiki/Concord_Resort_Hotel
[13] http://www.investopedia.com/terms/p/participationrate.asp

workers who would like to work but feel there are not enough opportunities to warrant engaging in a job search. However, the participation rate is also being impacted by social and demographic trends; for example, there has been a decrease in labor-force participation by teenagers and young adults, as well as a demographic shift to more retirees as the population ages. The U.S. participation has been trending downward since the late 1990s, both during periods of economic expansion and contraction.

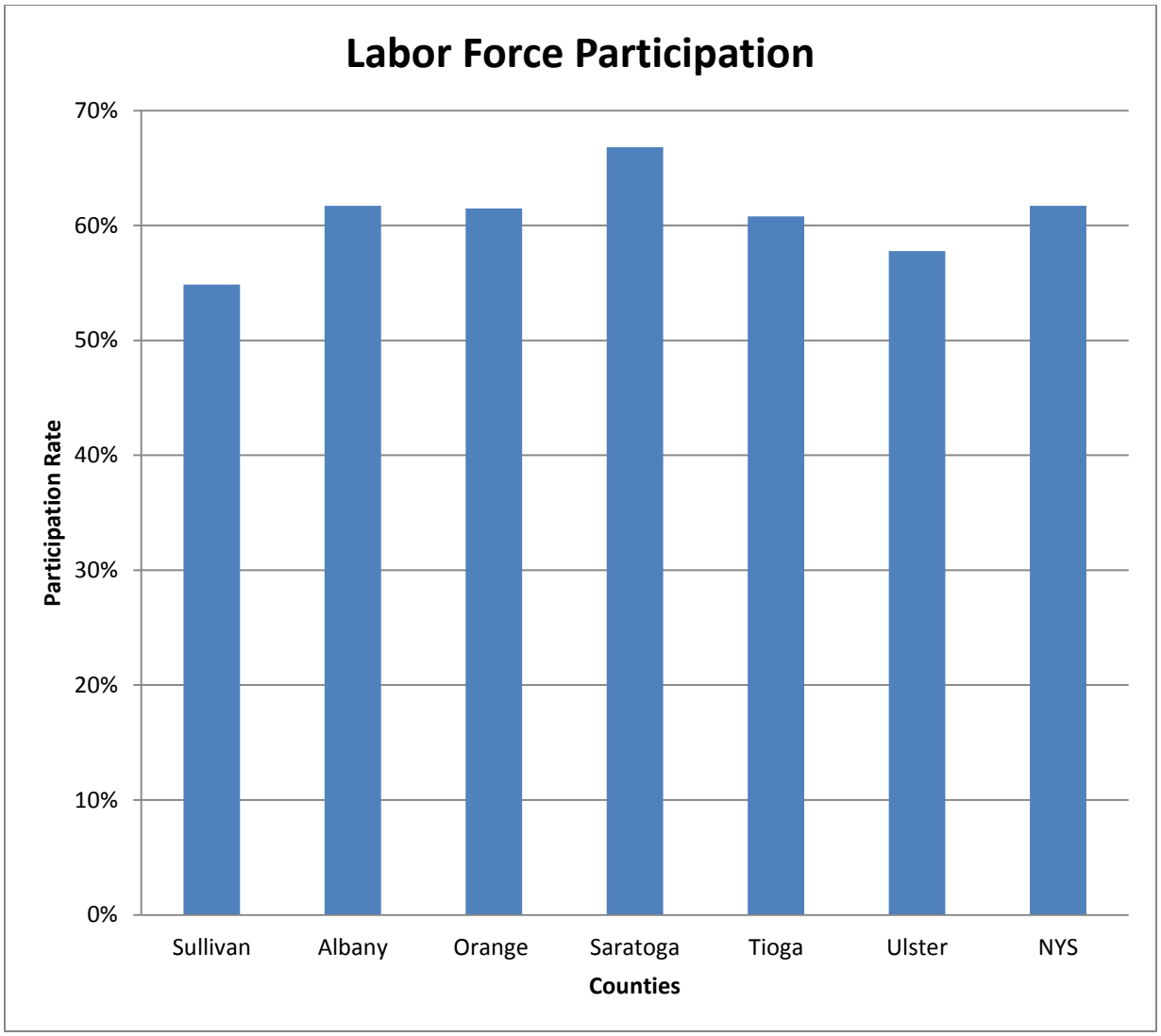
Now that economic conditions are seen as improving, it can be expected that the size of the civilian labor force will increase as discouraged workers re-enter the job market. According to the Bureau of Labor Statistics, approximately 1.1 percent of all individuals not currently in the labor force are classified as "discouraged" because they would like to work but are not searching for a job because of a perceived lack of available openings. The current level of discouraged workers is much higher than the average historical level reported from 2002 to 2007, 0.5 percent.

Discouraged workers have impacted the nation's participation rate, but social and demographic trends have had an even larger impact. If not for an increase in discouraged workers over the past four years, the participation rate would have been 0.5 percentage points higher in December 2011; still, the participation rate would remain 1.7 percentage points lower than it was in the beginning of 2008.

So what does this mean for the nation's labor market? For one, the U.S. unemployment rate would have been 9.4 percent in December instead of 8.5 percent if not for so many workers becoming discouraged and leaving the labor market. However, it appears that what has really held off a skyrocketing unemployment rate has been a long-term decrease in labor force participation associated with other social and demographic factors. In short, if not for an ongoing wave of retirements and a decline in labor force participation among young adults, the nation's unemployment rate would still be in double-digit territory.

Labor Force Participation Rate

Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
55%	62%	61%	67%	61%	58%	62%



Participation Rate Differentials

Ave Dif	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**NYS**
Sullivan	0.0%	-11.1%	-10.8%	-17.9%	-9.8%	-5.0%	-11.1%
Albany	12.5%	0.0%	0.4%	-7.6%	1.5%	6.8%	0.0%
Orange	12.1%	-0.4%	0.0%	-8.0%	1.1%	6.4%	-0.4%
Saratoga	21.8%	8.3%	8.7%	0.0%	9.9%	15.6%	8.2%
Tioga	10.8%	-1.5%	-1.1%	-9.0%	0.0%	5.3%	-1.5%
Ulster	5.3%	-6.4%	-6.0%	-13.5%	-5.0%	0.0%	-6.4%
NYS	12.5%	0.0%	0.4%	-7.6%	1.5%	6.8%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest labor force participation rate (55%) next to Ulster County (58%).

Sullivan County's historic labor force participation rate is:

- 11.1% lower than Albany County
- 10.8% lower than Orange County
- 17.9% lower than Saratoga County
- 9.8% lower than Tioga County
- 5.0% lower than Ulster County

Albany County

Albany County has the 2nd highest labor force participation rate (62%) next to Saratoga County (67%).

Albany County's labor force participation rate is:

- 12.5% higher than Sullivan County
- 0.4% higher than Orange County
- 7.6% lower than Saratoga County
- 1.5% higher than Tioga County
- 6.8% higher than Ulster County

Orange County

Orange County has the 3rd highest labor force participation rate (61.5%) of the 6 counties in the study.

Orange County's labor force participation rate is:

- 12.1% higher than Sullivan County
- 0.4% lower than Albany
- 8.0% lower than Saratoga County
- 1.1% higher than Tioga County
- 6.4% higher than Ulster County

Saratoga County

Saratoga County has the highest labor force participation rate (67%) of the 6 counties in the study.

Saratoga County's labor force participation rate is:
- 21.8% higher than Sullivan County
- 8.3% higher than Albany
- 8.7% higher than Orange County
- 9.9% higher than Tioga County
- 15.6% higher than Ulster County

Tioga County

Tioga County has the 3rd lowest labor force participation rate (60.8%) of the 6 counties in the study.

Tioga County's labor force participation rate is:
- 10.8% higher than Sullivan County
- 1.5% lower than Albany
- 1.1% lower than Orange County
- 9.0% lower than Saratoga County
- 5.3% higher than Ulster County

Ulster County

Ulster County has the 2nd lowest labor force participation rate (58%) next to Sullivan (55%).

Ulster County's labor force participation rate is:
- 5.3% higher than Sullivan County
- 6.4% lower than Albany
- 6.0% lower than Orange County
- 13.5% lower than Saratoga County
- 5.0% lower than Tioga County

Labor Force Participation Rate - Section Conclusion

Labor Force Participation Rate Rank:
Sullivan 55%
Ulster 58%
Tioga 60.8%
Orange 61.5%
Albany 62%
Saratoga 67%

Of the 6 counties in this study, Sullivan County (55%) had the lowest labor force participation rate. It is 17.9% lower than the highest Saratoga County (67%) and 11.1% lower than New York State.

People who fall outside the participation rate have, by definition "no interest in working" vs. the unemployed who are presumably "looking for work but unable to find it" and the employed who are obviously working. But, as noted in the Upjohn Institute article, this fails to take into account "discouraged workers" or people who have an interest in working but have given up.

Factoring labor force participation rate alone, Sullivan County clearly has the lowest rate and thus it is reasonable to assume, the highest percentage of discouraged workers. It should be noted that these discouraged workers presumable have no income and if employed could spend a majority of their new salary on new consumption. It is also plausible, due to the history of resorts in Sullivan County, that many of the discouraged workers might have hospitality experience.

Per Capita Income

Source: U. S. Census Bureau, American Community Survey, 5-Year Estimates. Updated every year.[14]

Definitions: Per capita income is the mean money income received in the past 12 months computed for every man, woman and child in a geographic area. It is derived by dividing the total income of all people 15 years of age and over in a geographic area by the total population in that area. Note: Income data is not collected for people under 15 years of age even though those people are included in the denominator of per capita income. This measure is rounded to the nearest whole dollar.

Monetary income includes amounts reported separately for: wage or salary income; net self-employment income; interest; dividends; net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and, all other income.

Receipts from the following sources are not included as income: capital gains; money received from the sale of property (unless the recipient was engaged in the business of selling such property); the value of income "in kind" from food stamps, public housing subsidies, medical care, employer contributions for individuals, etc.; withdrawal of bank deposits; money borrowed; tax refunds; exchange of money between relatives living in the same household; gifts and lump-sum inheritances; insurance payments; and, other types of lump-sum receipts.

Scope and Methodology: These data are collected in the American Community Survey (ACS). The data for each geographic area are presented together with margins of error at factfinder2.census.gov. The data are period estimates: That is, they represent the characteristics of the population over a specific 60-month data collection period.

[14] http://factfinder2.census.gov

Since answers to income questions are frequently based on memory and not on records, many people tend to forget minor or sporadic sources of income and, therefore, underreport their income. Underreporting tends to be more pronounced for income sources that are not derived from earnings, such as public assistance, interest, dividends and net rental income.

Margins of Error (MOE): ACS estimates are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a MOE. The MOE used with ACS estimates can be interpreted as providing a 90-percent probability that the interval defined by the estimate plus the MOE and the estimate minus the MOE (the upper and lower confidence bounds) contains the full population value of the estimate.

For example, suppose the 5-year ACS reported the percentage of people 25 years of age and older in Birmingham, Alabama who had a bachelor's degree was 21.3 percent and that the MOE associated with this estimate is plus or minus (+/-) 0.9 percent. By adding and subtracting the MOE from the estimate, we can calculate the 90-percent confidence interval for this estimate at 21.3%, +/-0.9%:

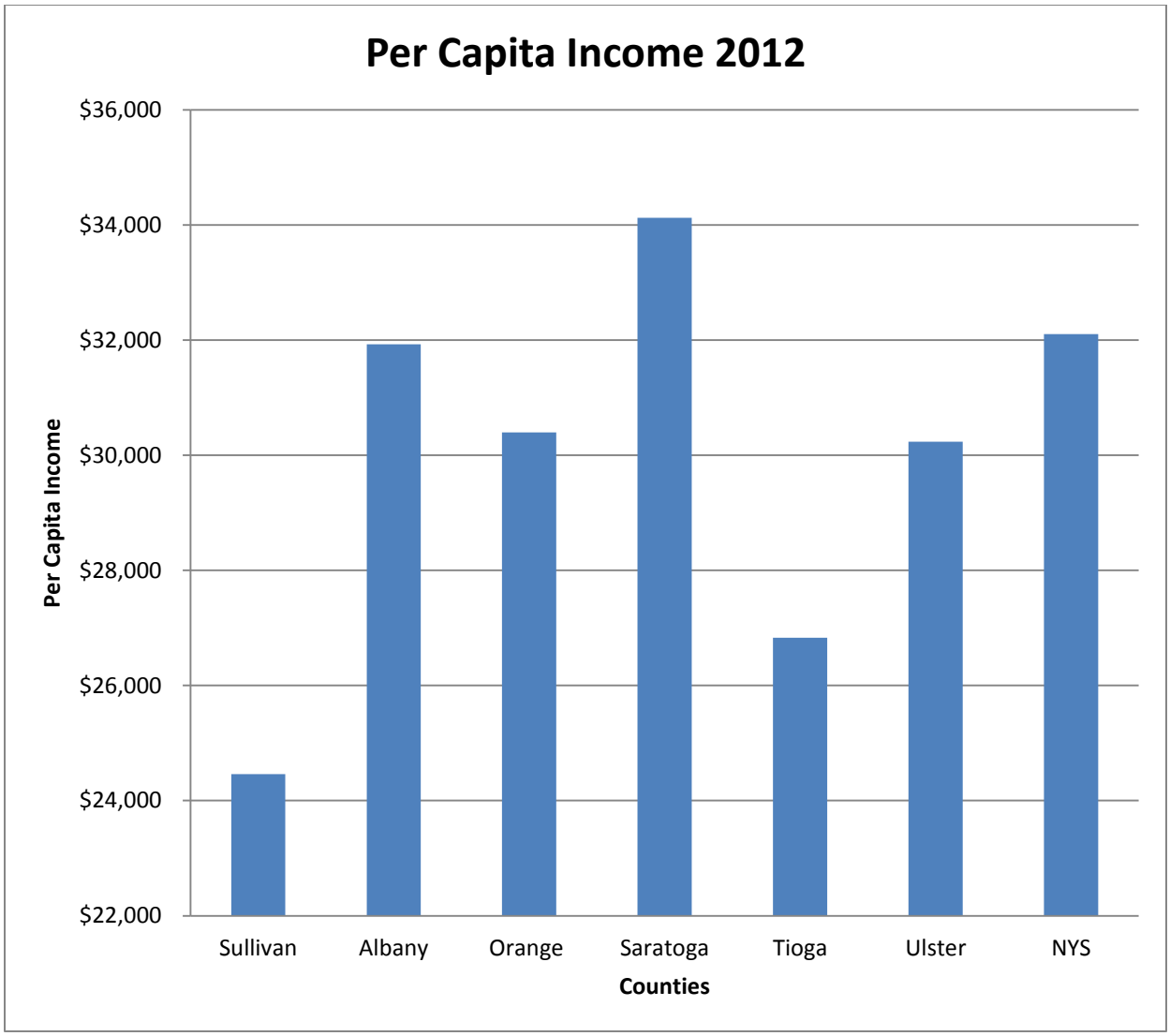
21.3% - 0.9% = 20.4% = Lower-bound estimate
21.3% + 0.9% = 22.2% = Upper-bound estimate

Therefore, we can be 90-percent confident that the percent of the population in Birmingham, Alabama of 25 years of age and older having a bachelor's degree in 2007-2011 falls somewhere between 20.4% and 22.2%.

Per capita money income in past 12 months (2012 dollars), 2008-2012[15]

Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
$ 24,462	$ 31,924	$ 30,397	$ 34,125	$ 26,831	$30,232	$32,104

[15] http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl



Current (2012) Income Differentials

Avg. Dif	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-23.4%	-19.5%	-28.3%	-8.8%	-19.1%	-23.8%
Albany	30.5%	0.0%	5.0%	-6.4%	19.0%	5.6%	-0.6%
Orange	24.3%	-4.8%	0.0%	-10.9%	13.3%	0.5%	-5.3%
Saratoga	39.5%	6.9%	12.3%	0.0%	27.2%	12.9%	6.3%
Tioga	9.7%	-16.0%	-11.7%	-21.4%	0.0%	-11.2%	-16.4%
Ulster	23.6%	-5.3%	-0.5%	-11.4%	12.7%	0.0%	-5.8%
NYS	31.2%	0.6%	5.6%	-5.9%	19.7%	6.2%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest current per capita income ($24,462) next to Tioga ($26,831).

Sullivan County's current per capita income is:

23.4% lower than Albany County
19.5% lower than Orange County
28.3% lower than Saratoga County
8.8% lower than Tioga County
19.1% lower than Ulster County
23.8% lower than New York State

Albany County

Albany County has the 2nd highest per capita income ($31,924) next to Saratoga ($34,125).

Albany County's current per capita income is:

30.5% higher than Sullivan County
5.0% higher than Orange County
6.4% lower than Saratoga County
19.0% higher than Tioga County
19.1% higher than Ulster County
0.6% lower than New York State

Orange County

Orange County has the 3rd highest current per capita income ($30,397) of the 6 counties in the study.

Orange County's current per capita income is:

24.3% higher than Sullivan County
4.8% lower than Albany
10.9% lower than Saratoga County
13.3% higher than Tioga County
0.5% higher than Ulster County
5.3% lower than New York State

Saratoga County

Saratoga County has the highest current per capita income ($34,125) of the 6 counties in the study.

Saratoga County's current per capita income is:
- 39.5% higher than Sullivan County
- 6.9% higher than Albany
- 12.3% higher than Orange County
- 27.2% higher than Tioga County
- 12.9% higher than Ulster County
- 6.3% higher than New York State

Tioga County

Tioga County has the 2nd lowest current per capita income ($26,831) next to Sullivan ($24,462).

Tioga County's current per capita income is:
- 9.7% higher than Sullivan County
- 16.0% lower than Albany
- 11.7% lower than Orange County
- 21.4% lower than Saratoga County
- 11.2% lower than Ulster County
- 16.4% lower than New York State

Ulster County

Ulster County has the 3rd lowest per capita income ($30,232) of the 6 counties in the study.

Ulster County's current per capita income is:
- 23.6% higher than Sullivan County
- 5.3% lower than Albany
- 0.5% lower than Orange County
- 11.4% lower than Saratoga County
- 12.7% higher than Tioga County
- 5.8% lower than New York State

Per Capita Income - Section Conclusion

Per Capita Income Rank:
Sullivan 24,462
Tioga 26,831
Ulster 30,232
Orange 30,397
Albany 31,924
Saratoga 34,125

Of the 6 counties in this study, Sullivan County has the lowest current (2012) per capita income ($24,462) which is 28.3% lower than Saratoga, which has the highest per capita income ($34,125).

Sullivan County's current (2012) per capita income ($24,462) is 19.5% and 19.1% lower than neighboring Orange County ($30,397) and Ulster County ($30,232) respectively.

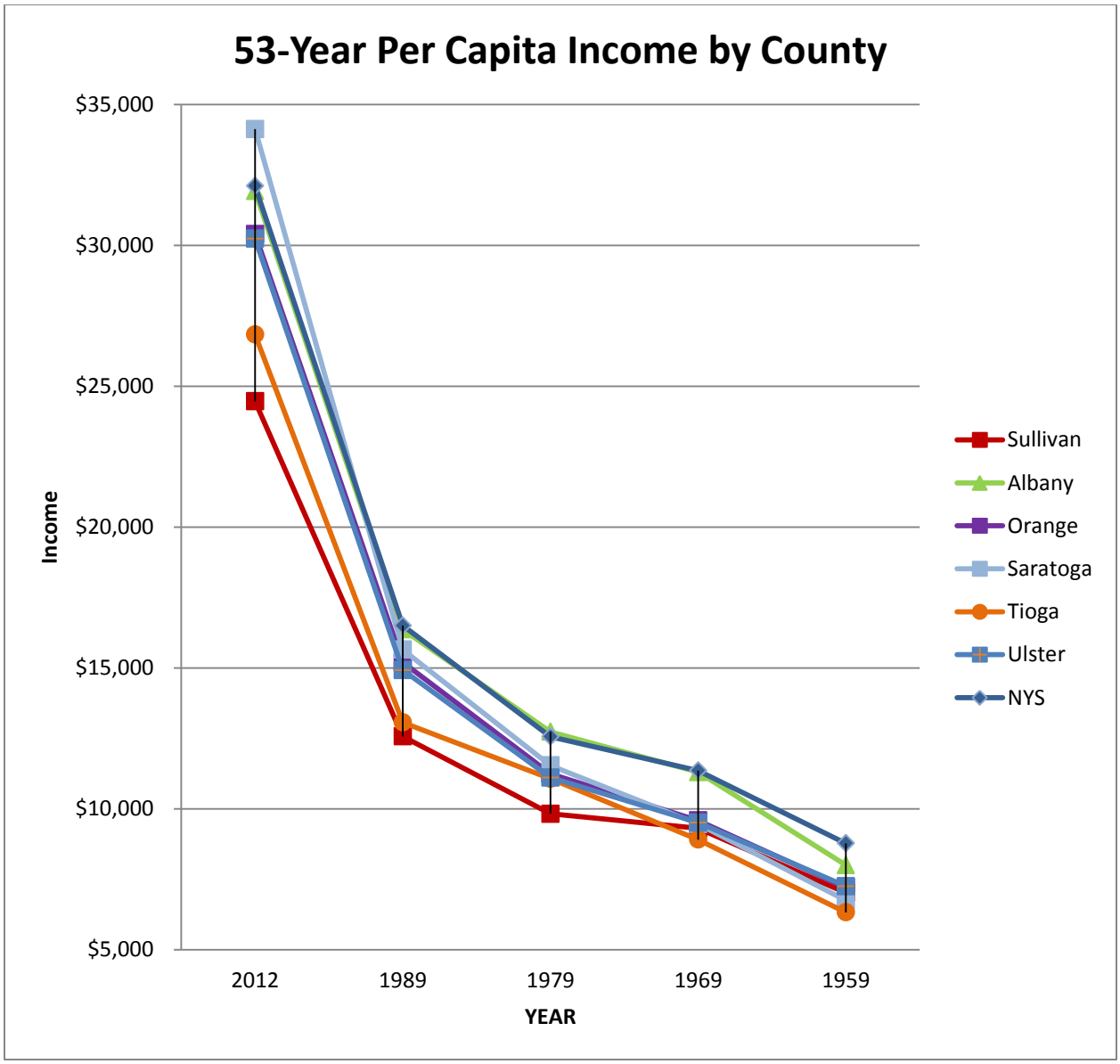
Historical Per Capita Income

Per Capita Income by County: 1959, 1969, 1979, and 1989[16]

(Income in 1989 CPI-U adjusted dollars1/)	1989	1979	1969	1959
New York State	$16,501	$12,561	$11,355	$8,774
Albany County, NY	16,363	12,732	11,298	7,997
Allegany County, NY	9,907	8,682	7,890	5,639
Bronx County, NY	10,535	8,953	9,152	7,813
Broome County, NY	13,626	11,514	9,898	7,931
Cattaraugus County, NY	10,595	9,404	8,114	6,447
Cayuga County, NY	11,671	9,947	8,460	6,302
Chautauqua County, NY	11,287	10,357	8,778	7,004
Chemung County, NY	12,069	10,478	8,951	7,001
Chenango County, NY	11,830	9,580	8,655	6,475
Clinton County, NY	11,444	8,953	7,585	5,882
Columbia County, NY	14,044	10,716	8,891	6,793
Cortland County, NY	11,228	9,426	8,696	6,804
Delaware County, NY	11,180	9,513	8,372	5,984
Dutchess County, NY	17,420	12,666	10,417	7,420
Erie County, NY	13,560	11,887	10,143	7,966
Essex County, NY	11,354	9,716	8,261	6,055
Franklin County, NY	9,771	8,853	7,119	5,556
Fulton County, NY	11,330	10,009	8,866	7,095
Genesee County, NY	12,705	11,188	9,341	7,134
Greene County, NY	12,722	10,071	8,551	6,192
Hamilton County, NY	11,682	9,164	7,575	6,102
Herkimer County, NY	10,543	9,469	9,029	6,702

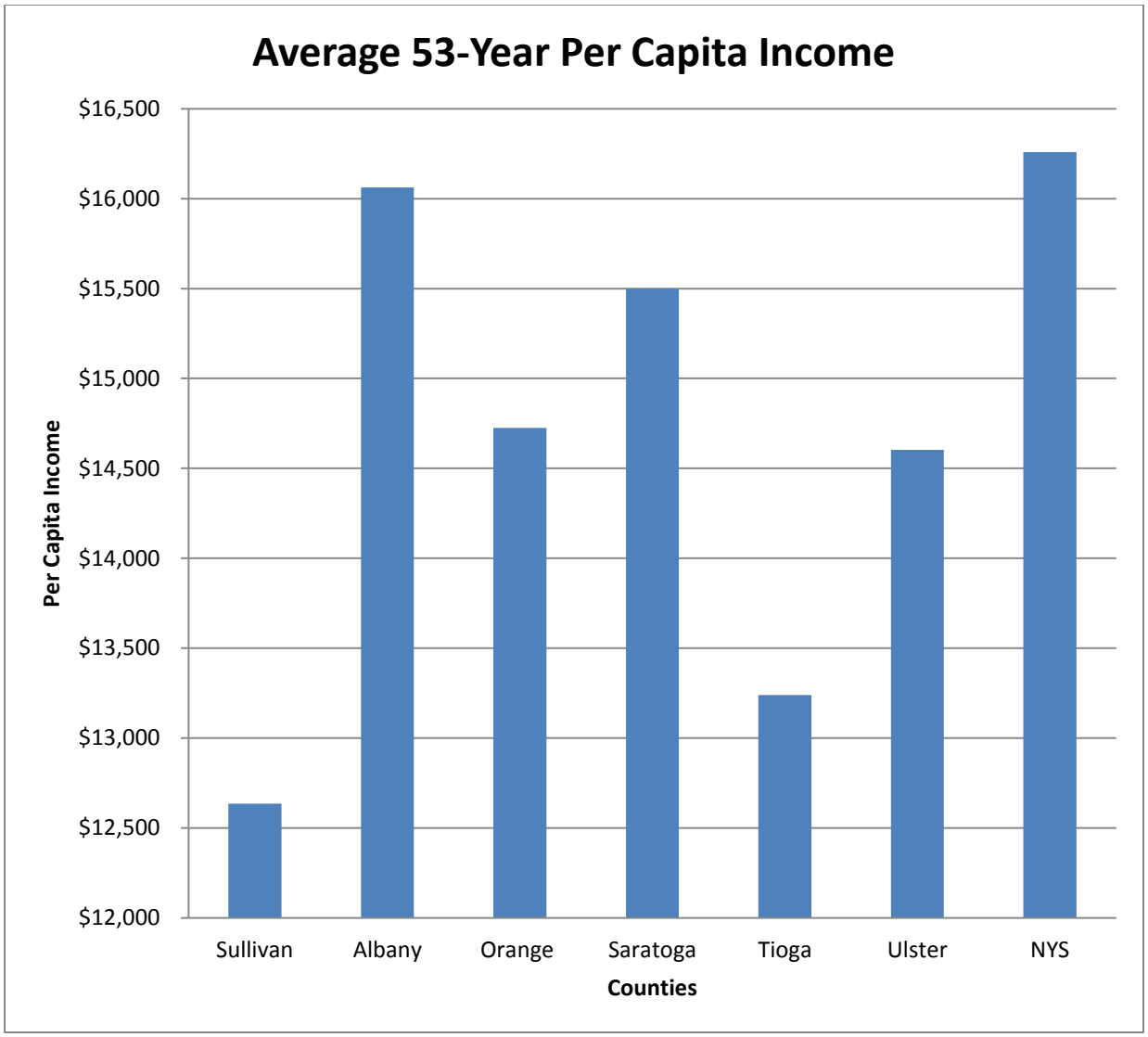
[16] https://www.census.gov/hhes/www/income/data/historical/county/county3.html

Jefferson County, NY	11,160	9,387	8,302	6,424
Kings County, NY	12,388	9,642	9,577	7,734
Lewis County, NY	10,455	8,906	7,320	5,403
Livingston County, NY	12,585	10,396	9,187	6,306
Madison County, NY	12,334	9,989	8,671	6,565
Monroe County, NY	16,162	13,898	12,025	9,010
Montgomery County, NY	11,640	10,091	9,020	6,793
Nassau County, NY	23,352	16,705	14,616	11,278
New York County, NY	27,862	18,057	16,403	11,423
Niagara County, NY	12,710	11,688	9,665	7,978
Oneida County, NY	12,227	10,302	9,256	7,271
Onondaga County, NY	14,703	12,209	10,656	8,366
Ontario County, NY	14,601	11,529	9,649	6,989
Orange County, NY	15,198	11,239	9,583	7,205
Orleans County, NY	11,776	10,949	9,473	6,777
Oswego County, NY	11,792	9,883	8,249	6,333
Otsego County, NY	11,657	9,303	8,331	6,031
Putnam County, NY	20,536	13,672	10,763	8,456
Queens County, NY	15,348	12,650	12,576	9,818
Rensselaer County, NY	14,031	10,602	9,498	7,071
Richmond County, NY	17,507	12,695	11,015	8,056
Rockland County, NY	20,195	14,458	11,771	8,284
St. Lawrence County, NY	10,346	8,834	7,720	5,972
Saratoga County, NY	15,644	11,535	9,454	6,742
Schenectady County, NY	15,378	12,517	11,100	8,664
Schoharie County, NY	11,333	8,970	8,000	5,651
Schuyler County, NY	10,825	9,350	8,318	5,965
Seneca County, NY	12,408	10,709	8,453	6,420
Steuben County, NY	11,933	10,468	8,696	6,753
Suffolk County, NY	18,481	12,695	10,543	7,711
Sullivan County, NY	12,567	9,819	9,306	7,020
Tioga County, NY	13,064	11,068	8,907	6,326
Tompkins County, NY	13,171	10,493	10,055	7,746
Ulster County, NY	14,921	11,108	9,505	7,252
Warren County, NY	14,378	10,366	8,913	7,197
Washington County, NY	12,221	9,104	7,874	6,102
Wayne County, NY	13,313	11,170	9,457	6,691
Westchester County, NY	25,584	17,767	15,922	12,761
Wyoming County, NY	10,552	9,628	8,403	6,082
Yates County, NY	11,065	10,014	8,727	5,796



53-Year per Capita Average

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Average	$12,635	$16,063	$14,724	$15,500	$13,239	$14,604	$16,259



53-year Per Capita Average Differentials

53-Year Average

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-21.3%	-14.2%	-18.5%	-4.6%	-13.5%	-22.3%
Albany	27.1%	0.0%	9.1%	3.6%	21.3%	10.0%	-1.2%
Orange	16.5%	-8.3%	0.0%	-5.0%	11.2%	0.8%	-9.4%
Saratoga	22.7%	-3.5%	5.3%	0.0%	17.1%	6.1%	-4.7%
Tioga	4.8%	-17.6%	-10.1%	-14.6%	0.0%	-9.3%	-18.6%
Ulster	15.6%	-9.1%	-0.8%	-5.8%	10.3%	0.0%	-10.2%
NYS	28.7%	1.2%	10.4%	4.9%	22.8%	11.3%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest 53-year average per capita income ($12,365) next to Tioga ($13,239).

Sullivan County's 53-year average per capita income is:

21.3% lower than Albany County
14.2% lower than Orange County
18.5% lower than Saratoga County
4.6% lower than Tioga County
13.5% lower than Ulster County
22.3% lower than New York State

Albany County

Albany County has the highest 53-year average per capita income ($16,063) of the 6 counties.

Albany County's 53-year average per capita income is:

27.1% higher than Sullivan County
9.1% higher than Orange County
3.6% higher than Saratoga County
21.3% higher than Tioga County
10.0% higher than Ulster County
1.2% lower than New York State

Orange County

Orange County has the 3rd highest 53-year average per capita income ($14,724) of the 6 counties in the study.

Orange County's 53-year average per capita income is:

16.5% higher than Sullivan County
8.3% lower than Albany
5.0% lower than Saratoga County
11.2% higher than Tioga County
0.8% higher than Ulster County
9.4% lower than New York State

Saratoga County

Saratoga County has the 2nd highest 53-year average per capita income ($15,500) next to Albany County ($16,063).

Saratoga County's 53-year average per capita income is:

22.7% higher than Sullivan County
3.5% lower than Albany
5.3% higher than Orange County
17.1% higher than Tioga County
6.1% higher than Ulster County
4.7% lower than New York State

Tioga County

Tioga County has the 2nd lowest 53-year average per capita income ($13,239) next to Sullivan ($12,635).

Tioga County's 53-year average per capita income is:

4.8% higher than Sullivan County
17.6% lower than Albany
10.1% lower than Orange County
14.6% lower than Saratoga County
9.3% lower than Ulster County
18.6% lower than New York State

Ulster County

Ulster County has the 3rd lowest per capita income ($14,604) of the 6 counties in the study.

Ulster County's 53-year average per capita income is:

15.6% higher than Sullivan County
9.1% lower than Albany
0.8% lower than Orange County
5.8% lower than Saratoga County
10.3% higher than Tioga County
10.2% lower than New York State

Historical Per Capita Income - Section Conclusion

Of the 6 counties in this study, Sullivan County has the lowest 53-year average per capita income ($12,365) which is 21.3% lower than Albany County's per capita income, which has the highest ($16,063).

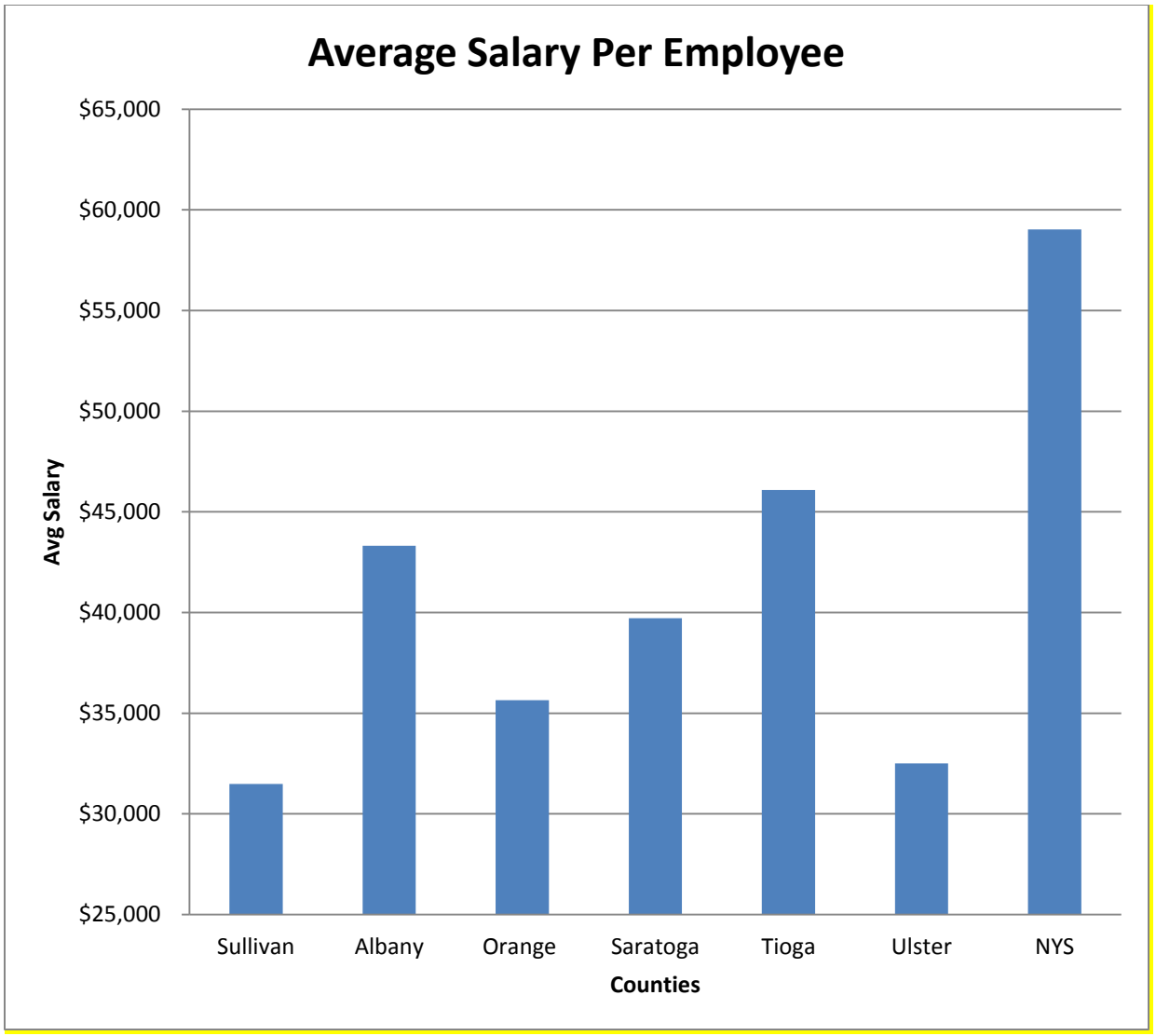
Sullivan County's current (2012) per capita income ($12,365) is 14.2% and 13.5% lower than neighboring Orange County ($14,724) and Ulster County ($14,604) respectively.

Per Employee Wage

U.S. Census 2011 County Business Patterns (NAICS). Total Annual Payroll devised by paid employees for pay period including March 12 (number).[17]

Per Worker (2011)	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Total Salaries in 1,000's	$572,552	$7,313,634	$3,787,814	$2,424,754	$523,633	$1,432,190	$435,008,622
Total Workers	18,186	168,868	106,253	61,049	11,362	44,056	7,369,731
Avg Per Worker	$31,483	$43,310	$35,649	$39,718	$46,086	$32,508	$59,026

[17] http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl



Average Salary per Employee Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-27.3%	-11.7%	-20.7%	-31.7%	-3.2%	-46.7%
Albany	37.6%	0.0%	21.5%	9.0%	-6.0%	33.2%	-26.6%
Orange	13.2%	-17.7%	0.0%	-10.2%	-22.6%	9.7%	-39.6%
Saratoga	26.2%	-8.3%	11.4%	0.0%	-13.8%	22.2%	-32.7%
Tioga	46.4%	6.4%	29.3%	16.0%	0.0%	41.8%	-21.9%
Ulster	3.3%	-24.9%	-8.8%	-18.2%	-29.5%	0.0%	-44.9%
NYS	87.5%	36.3%	65.6%	48.6%	28.1%	81.6%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest average salary per employee ($31,483) next to Ulster ($32,508).

Sullivan County's average salary per employee is:

- 27.3% lower than Albany County
- 11.7% lower than Orange County
- 20.7% lower than Saratoga County
- 31.7% lower than Tioga County
- 3.2% lower than Ulster County
- 46.7% lower than New York State

Albany County

Albany County has the 2nd highest average salary per employee ($43,310) next to Tioga ($46,086).

Albany County's average salary per employee is:

- 37.6% higher than Sullivan County
- 21.5% higher than Orange County
- 9.0% higher than Saratoga County
- 6.0% lower than Tioga County
- 33.2% higher than Ulster County
- 26.6% lower than New York State

Orange County

Orange County has the 3rd lowest average salary per employee ($35,649) of the 6 counties in the study.

Orange County's average salary per employee is:

- 13.2% higher than Sullivan County
- 17.7% lower than Albany
- 10.2% lower than Saratoga County
- 22.6% lower than Tioga County
- 9.7% higher than Ulster County
- 39.6% lower than New York State

Saratoga County

Saratoga County has the 3rd highest average salary per employee ($39,718).

Saratoga County's average salary per employee is:

- 26.2% higher than Sullivan County
- 8.3% lower than Albany
- 11.4% higher than Orange County
- 13.8% lower than Tioga County
- 22.2% higher than Ulster County
- 32.7% lower than New York State

Tioga County

Tioga County has the highest average salary per employee ($46,086) next to Albany County ($43,310).

Tioga County's average salary per employee is:

- 46.4% higher than Sullivan County
- 6.4% higher than Albany
- 29.3% higher than Orange County
- 16.0% higher than Saratoga County
- 41.8% higher than Ulster County
- 21.9% lower than New York State

Ulster County

Ulster County has the 2nd lowest average salary per employee ($32,508) next to Sullivan County ($31,483).

Ulster County's average salary per employee is:

- 3.3% higher than Sullivan County
- 24.9% lower than Albany
- 8.8% lower than Orange County
- 18.2% lower than Saratoga County
- 29.5% lower than Tioga County
- 44.9% lower than New York State

Average Salary per Employee - Section Conclusion

Average Salary per Employee Rank:
Sullivan $31,483
Ulster $32,508
Orange $35,649
Saratoga $39,718
Albany $43,310
Tioga $46,086

Of the 6 counties in this study, Sullivan County has the lowest average salary per employee ($31,483) which is 31.7% lower than Tioga County, which has the highest salary per employee ($46,086).

Marginal Propensity to Consume Per Average Salary

Definition of 'Marginal Propensity to Consume – MPC

The proportion of an aggregate raise in pay that a consumer spends on the consumption of goods and services, as opposed to saving it. Marginal propensity to consume is a component of Keynesian macroeconomic theory and is calculated as the change in consumption divided by the change in income. MPC is depicted by a consumption line—a sloped line created by plotting change in consumption on the vertical y axis and change in income on the horizontal x axis.

The marginal propensity to consume (MPC) is equal to $\Delta C / \Delta Y$, where ΔC is change in consumption, and ΔY is change in income. If consumption increases by 80 cents for each additional dollar of income, then MPC is equal to 0.8 / 1 = 0.8.

Suppose you receive a $500 bonus on top of your normal annual earnings. You suddenly have $500 more in income than you did before. If you decide to spend $400 of this marginal increase in income on a new business suit and save the remaining $100, your marginal propensity to consume will be 0.8 ($400 divided by $500). This also means that your marginal propensity to save will be 0.2 ($100 divided by $500). If you decide to save the entire $500, your marginal propensity to consume will be 0 ($0 divided by 500).

The other side of the marginal propensity to consume is marginal propensity to save, which shows how much a change in income affects levels of saving. Marginal propensity to consume + marginal propensity to save = 1.

Given data on household income and household spending, economists can calculate households' MPCs by income level. This calculation is important because MPC is not constant; it varies by income level. Typically, the higher the income, the lower the MPC, because as wealth increases, so does the ability to satisfy needs and wants, so each additional dollar is less likely to go toward additional spending.

According to Keynesian theory, an increase in production increases consumers' income, and they will then spend more. If we know what their marginal propensity to consume is, then we can calculate how much an increase in production will affect spending. This additional spending will generate additional production, creating a continuous cycle. The higher the MPC, the higher the multiplier—the more the increase in consumption from the increase in investment.[18]

The Distribution of Wealth and the Marginal Propensity to Consume[19]
October 23, 2013

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Abstract
We present a macroeconomic model calibrated to match both microeconomic and macroeconomic evidence on household income dynamics. When the model is modified in a way that permits it to match empirical measures of wealth inequality in the U.S., we show that its predictions (unlike those of competing models) are consistent with the substantial body of microeconomic evidence which suggests that the annual marginal propensity to consume (MPC) is much larger than the 0.02–0.04 range implied by commonly-used macroeconomic models. Our model also (plausibly) predicts that the aggregate MPC can differ greatly depending on how the shock is distributed across categories of households (e.g., low-wealth versus high-wealth households).
Keywords Microfoundations, Wealth Inequality, Marginal Propensity to Consume
JEL codes D12, D31, D91, E21

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1 Introduction

In developed economies, wealth is very unevenly distributed. Recent waves of the triennial U.S. *Survey of Consumer Finances*, for example, have consistently found the top 1 percent of households holding about a third of total wealth, with the bottom 60 percent owning very little net wealth.[2]
Such inequality could matter for macroeconomics if households with different amounts of wealth respond differently to the same aggregate shock. Indeed, microeconomic studies (reviewed in section 2.2) have often found that the annual marginal propensity to consume out of one-time income shocks (henceforth, 'the MPC') is substantially larger for low-wealth than for high-wealth households. In the presence of such microeconomic heterogeneity, the aggregate size of, say, a fiscal shock is not sufficient to compute the shock's effect on spending; that effect will depend on how the shock is distributed across categories of households with different MPC's.

We began this project with the intuition that it might be possible to explain both the degree of wealth heterogeneity and microeconomic MPC heterogeneity with a single mechanism: A description of household income dynamics that incorporated fully permanent shocks to

[18] http://www.investopedia.com/terms/m/marginalpropensitytoconsume.asp
[19] http://www.econ2.jhu.edu/people/ccarroll/papers/cstMPC/

household-specific income, calibrated using evidence from the existing large empirical microeconomics literature (along with correspondingly calibrated transitory shocks).[3,4]

In the presence of both transitory and permanent shocks, "buffer stock" models in which consumers have long horizons imply that decision makers aim to achieve a target *ratio* of wealth to permanent income. In such a framework, we thought it might be possible to explain the inequality in wealth as stemming mostly from inequality in permanent income (with any remaining wealth inequality reflecting the influence of appropriately calibrated transitory shocks). Furthermore, the optimal consumption function in such models is concave (that is, the MPC is higher for households with lower wealth ratios), just as the microeconomic evidence suggests.

In our calibrated model the degree of wealth inequality is indeed similar to the degree of permanent income inequality. And our results confirm that a model calibrated to match empirical data on income dynamics can reproduce the level of observed permanent income inequality in data from the *Survey of Consumer Finances*. But that same data shows that the degree of inequality in measured wealth is much greater than inequality in measured permanent income. Thus, while our initial model does better in matching wealth inequality than some competing models, its baseline version is not capable of explaining the observed degree of wealth inequality in the U.S. as merely a consequence of permanent income inequality.

Furthermore, while the concavity of the consumption function in our baseline model does imply that low wealth households have a higher MPC, the size of the difference in MPCs across wealth groups is not as large as the empirical evidence suggests. And the model's implied aggregate MPC remains well below what we perceive to be typical in the empirical literature: 0.2–0.6 (see the literature survey below).

All of these problems turn out to be easy to fix. If we modify the model to allow a modest degree of heterogeneity in impatience across households, the modified model is able to match the distribution of wealth remarkably well. And the aggregate MPC implied by that modified model falls within the range of what we view as the most credible empirical estimates of the MPC (though at the low end).

In a further experiment, we recalibrate the model so that it matches the degree of inequality in *liquid financial assets*, rather than total net worth. Because the holdings of liquid financial assets are substantially more heavily concentrated close to zero than holdings of net worth, the model's implied aggregate MPC then increases to roughly 0.4, well into the middle of the range of empirical estimates of the MPC. Consequently, the aggregate MPC in our models is an order of magnitude larger than in models in which households are well-insured and react negligibly to transitory income shocks, having MPC's of 0.02–0.04.

We also compare the business-cycle implications of two alternative modeling treatments of aggregate shocks. In the simpler version, aggregate shocks follow the Friedmanesque structure of our microeconomic shocks: All shocks are either fully permanent or fully transitory. We show that the aggregate MPC in this setup essentially does not vary over the business cycle because aggregate shocks are small and uncorrelated with idiosyncratic shocks.

Finally, we present a version of the model where the aggregate economy alternates between periods of boom and bust, as in Krusell and Smith (1998). Intuition suggests that this model has more potential to exhibit cyclical fluctuations in the MPC, because aggregate shocks are correlated with idiosyncratic shocks. In this model, we can explicitly ask questions like "how does the aggregate MPC differ in a recession compared to an expansion" or even more complicated questions like "does the MPC for poor households change more than for rich households over the business cycle?" The surprising answer is that neither the mean value of the MPC nor the distribution of MPC's changes much when the economy switches from one state to the other. To the extent that this feature of the model is a correct description of reality, the result is encouraging because it provides reason to hope that microeconomic empirical evidence about the MPC obtained during normal, non-recessionary times may still provide a good guide to the effects of stimulus programs for policymakers confronting extreme circumstances like those of the Great Recession.[5]

The rest of the paper is structured as follows. The next section explains the relation of our paper's modeling strategy to (some of) the related vast literature. Section 3 presents the income process we propose, consisting of idiosyncratic and aggregate shocks, each having a transitory and a permanent component. Section 4 lays out two variants of the baseline model—without and with heterogeneity in the rate of time preference—and explores how these models perform in capturing the degree of wealth inequality in the data. Section 5 compares the marginal propensities in these models to those in the Krusell and Smith (1998) model and investigates how the aggregate MPC varies over the business cycle. Section 6 concludes.

2 Relation to the Literature

2.1 Theory

Our modeling framework builds on the heterogeneous-agents model of Krusell and Smith (1998), with the modification that we aim to accommodate transitory-and-permanent-shocks microeconomic income process that is a modern implementation of ideas dating back to Friedman (1957) (see section 3). However, directly adding permanent shocks to income would produce an ever-widening cross-sectional distribution of permanent income, which is problematic because satisfactory analysis typically requires that models of this kind have stable (ideally, invariant) distributions for the key variables, so that appropriate calibrations for the model's parameters that match empirical facts can be chosen.

We solve this problem, essentially, by killing off agents in our model stochastically using the perpetual-youth mechanism of Blanchard (1985): Dying agents are replaced with newborns whose permanent income is equal to the mean level of permanent income in the population, so that a set of agents with dispersed values of permanent income is replaced with newborns with the same (population-mean) permanent income. When the distribution-compressing force of deaths outweighs the distribution-expanding influence from permanent shocks to income, this mechanism ensures that the distribution of permanent income has a finite variance.

A large literature starting with Zeldes (1989) has studied life cycle models in which agents face permanent (or highly persistent) and transitory shocks; a recent example that reflects the state of the art is Kaplan (2012). Mostly, that literature has been focused on microeconomic questions like the patterns of consumption and saving (or, recently, inequality) over the life cycle, rather than

traditional macroeconomic questions like the average MPC (though very recent work by Kaplan and Violante (2011), discussed in detail below, does grapple with the MPC). Such models are formidably complex, which probably explains why they have not (to the best of our knowledge) yet been embedded in a dynamic general equilibrium context like that of the Krusell and Smith (1998) type, which would permit the study of questions like how the MPC changes over the business cycle.
Perhaps closest to our paper in modeling structure is the work of Castaneda, Diaz-Gimenez, and Rios-Rull (2003). That paper constructs a microeconomic income process with a degree of serial correlation and a structure to the transitory (but persistent) income shocks engineered to match some key facts about the cross-sectional distributions of income and wealth in microeconomic data. But the income process that those authors calibrated does not resemble the microeconomic evidence on income dynamics very closely because the extremely rich households are assumed to face unrealistically high probability (roughly 10 percent) of a very bad and persistent income shock. Also, Castaneda, Diaz-Gimenez, and Rios-Rull (2003) did not examine the implications of their model for the aggregate MPC, perhaps because the MPC in their setup depends on the distribution of the deviation of households' actual incomes from their (identical) stationary level. That distribution, however, does not have an easily measurable empirical counterpart.

One important difference between the benchmark version of our model and most of the prior literature is our incorporation of heterogeneous time preference rates as a way of matching the portion of wealth inequality that cannot be matched by the dispersion in permanent income. A first point to emphasize here is that we find that quite a modest degree of heterogeneity in impatience is sufficient to let the model capture the extreme dispersion in the empirical distribution of net wealth: It is enough that all households have a (quarterly) discount factor roughly between 0.98 and 0.99.

Furthermore, our interpretation is that our framework parsimoniously captures in a single parameter (the time preference rate) a host of deeper kinds of heterogeneity that are undoubtedly important in the data (for example, heterogeneity in expectations of income growth associated with the pronounced age structure of income in life cycle models). The sense in which our model 'captures' these forms of heterogeneity is that, *for the purposes of our question* about the aggregate MPC, the crucial implication of many forms of heterogeneity is simply that they will lead households to hold different wealth positions which are associated with different MPC's. Since our model captures the distribution of wealth and the distribution of permanent income already, it is not clear that *for the purposes of computing MPC's*, anything would be gained by the additional realism obtained by generating wealth heterogeneity from a much more complicated structure (like a fully realistic specification of the life cycle). Similarly, it is plausible that differences in preferences aside from time preference rates (for example, attitudes toward risk, or intrinsic degrees of optimism or pessimism) might influence wealth holdings separately from either age/life cycle factors or pure time preference rates. Again, though, to the extent that those forms of heterogeneity affect MPC's by leading different households to end up at different levels of wealth, we would argue that our model captures the key outcome (the wealth distribution) that is needed for deriving implications about the MPC.

In our ultimate model, because many households are slightly impatient and therefore hold little wealth, they are not able to insulate their spending even from transitory shocks very well. In that

model, when households in the bottom half of the wealth distribution receive a one-off $1 in income, they consume up to 50 cents of this windfall in the first year, ten times as much as the corresponding annual MPC in the baseline Krusell–Smith model. For the population as a whole, the aggregate annual MPC out of a common transitory shock ranges between about 0.2 and about 0.5, depending on whether we target our model to match the empirical distribution of net worth or of liquid assets.[6]

2.2 Empirics

Table 1: Empirical Estimates of the Marginal Propensity to Consume (MPC) out of Transitory Income

	Consumption Measure				
Authors	Nondurables	Durables	Total PCE	Horizon*	Event/Sample
Agarwal and Quian (2013)			0.90	10 Months	Growth Dividend Program Singapore 2011
Blundell, Pistaferri, and Preston (2008)‡	0.05				Estimation Sample: 1980–92
Browning and Collado (2001)			~ 0		Spanish ECPF Data, 1985–95
Coronado, Lupton, and Sheiner (2005)			0.36	1 Year	2003 Tax Cut
Hausman (2012)			0.6–0.75	1 Year	1936 Veterans' Bonus
Hsieh (2003)‡	~ 0		0.6–0.75		CEX, 1980–2001
Jappelli and Pistaferri (2013)	0.48				Italy, 2010
Johnson, Parker, and Souleles (2009)	~ 0.25			3 Months	2003 Child Tax Credit
Lusardi (1996)‡	0.2–0.5				Estimation Sample: 1980–87
Parker (1999)	0.2			3 Months	Estimation Sample: 1980–93
Parker, Souleles, Johnson, and McClelland (2011)	0.12–0.30		0.50–0.90	3 Months	2008 Economic Stimulus

Sahm, Shapiro, and Slemrod (2010)			~ 1⁄3	1 Year	2008 Economic Stimulus
Shapiro and Slemrod (2009)			~ 1⁄3	1 Year	2008 Economic Stimulus Estimation Sample: 1980–91
Souleles (1999)	0.045–0.09	0.29–0.54	0.34–0.64	3 Months	
Souleles (2002)	0.6–0.9			1 Year	The Reagan Tax Cuts of the Early 1980s

Notes: ⋆ The horizon for which consumption response is calculated is 3 months or 1 year. The papers which estimate consumption response over the horizon of 3 months typically suggest that the response thereafter is only modest, so that the implied cumulative MPC over the full year is not much higher than over the first three months. ‡: elasticity.

Broda and Parker (2012) report the five-month cumulative MPC of 0.0836–0.1724 for the consumption goods in their dataset. However, the Homescan/NCP data they use only covers a subset of total PCE, in particular grocery and items bought in supercenters and warehouse clubs. We do not include the studies of the 2001 tax rebates, because our interpretation of that event is that it reflected a permanent tax cut that was not perceived by many households until the tax rebate checks were received. While several studies have examined this episode, e.g., Shapiro and Slemrod (2003), Johnson, Parker, and Souleles (2006), Agarwal, Liu, and Souleles (2007) and Misra and Surico (2011), in the absence of evidence about the extent to which the rebates were perceived as news about a permanent versus a transitory tax cut, any value of the MPC between zero and one could be justified as a plausible interpretation of the implication of a reasonable version of economic theory (that accounts for delays in perception of the kind that undoubtedly occur).

While these MPCs from our ultimate model are roughly an order of magnitude larger than those implied by off-the-shelf representative agent models (about 0.02 to 0.04), they are in line with the large and growing empirical literature estimating the marginal propensity to consume summarized in Table 1 and reviewed extensively in Jappelli and Pistaferri (2010).[7] Various authors have estimated the MPC using quite different household-level datasets, in different countries, using alternative measures of consumption and diverse episodes of transitory income shocks; our reading of the literature is that while a couple of papers find MPC's near zero, most estimates of the aggregate MPC range between 0.2 and 0.6,[8] considerably exceeding the low values implied by representative agent models or the standard framework of Krusell and Smith (1998).

Our work also supplies a rigorous rationale for the conventional wisdom that the effects of an economic stimulus are particularly strong if it is targeted to poor individuals and to the unemployed. For example, our simulations imply that a tax-or-transfer stimulus targeted on the bottom half of the wealth distribution or the unemployed is 2–3 times more effective in increasing

aggregate spending than a stimulus of the same size concentrated on the rest of the population. This finding is in line with the recent estimates of Blundell, Pistaferri, and Preston (2008), Broda and Parker (2012), Kreiner, Lassen, and Leth-Petersen (2012) and Jappelli and Pistaferri (2013), who report that households with little liquid wealth and without high past income react particularly strongly to an economic stimulus.[9]

Recent work by Kaplan and Violante (2011) models an economy with households who choose between a liquid and an illiquid asset, which is subject to substantial transaction costs. Their economy features a substantial fraction of wealthy hand-to-mouth consumers, and consequently—like ours—responds strongly to a fiscal stimulus. In many ways their analysis is complementary to ours. While our setup does not model the choice between liquid and illiquid assets, theirs does not include transitory idiosyncratic (or aggregate) income shocks. A prior literature (all the way back to Deaton (1991, 1992)) has shown that the presence of transitory shocks can have a very substantial impact on the MPC (a result that shows up in our model), and the empirical literature cited below (including the well-measured tax data in DeBacker, Heim, Panousi, Ramnath, and Vidangos (2013)) finds that such transitory shocks are quite large. Economic stimulus payments (like those studied by Broda and Parker (2012)) are precisely the kind of transitory shock to which we are interested in households' responses, and so arguably a model (like ours) that explicitly includes transitory shocks (calibrated to micro evidence on their magnitude) is likely to yield more plausible estimates of the MPC when a shock of the kind explicitly incorporated in the model comes along (per Broda and Parker (2012)).

A further advantage of our framework is that it is consistent with the evidence which suggests that the MPC is higher for low-net-worth households. In the KV framework, among households of a given age, the MPC will vary strongly with the degree to which a household's assets are held in liquid versus illiquid forms, but the relationship of the MPC to the household's total net worth is less clear.

Finally, our model is a full rational expectations dynamic macroeconomic model, while their model does not incorporate aggregate shocks. Our framework is therefore likely to prove more adaptable to general-purpose macroeconomic modeling purposes.

On the other hand, given the substantial differences we find in MPC's when we calibrate our model to match liquid financial assets versus when we calibrate it to match total net worth (reported below), the differences in our results across differing degrees of wealth liquidity would be more satisfying if we were able to explain them in a formal model of liquidity choice. For technical reasons not worth explicating here, the KV model of liquidity is not appropriate to our problem; given the lack of agreement in the profession about how to model liquidity, we leave that goal for future work (though preliminary experiments with modeling liquidity have persuaded us that the tractability of our model will make it a good platform for further exploration of this question).

3 The 'Friedman/Buffer Stock' Income Process

A key feature of our model is the labor income process, which closely resembles the verbal description of Friedman (1957) and which has been used extensively in the literature on buffer stock saving;[10] we therefore refer to it as the Friedman/Buffer Stock (or 'FBS') process.

Household income $\boldsymbol{y}_t$ is determined by the interaction of the aggregate wage rate W_t and two idiosyncratic components, a permanent component p_t and the transitory shock ξ_t:

$$\boldsymbol{y}_t = p_t \xi_t W_t.$$

The permanent component follows a geometric random walk:

$$p_t = p_{t-1}\psi_t, \qquad (1)$$

where the Greek letter *psi* mnemonically indicates the mean-one white noise *p*ermanent *s*hock to *i*ncome, $E_t[\psi_{t+n}] = 1 \; \forall \; n > 0$. The transitory component is:

$$\xi_t = \mu \text{ with probability } u_t, \qquad (2)$$

$$= (1-\tau_t)\ell\theta_t \text{ with probability } 1-u_t, \qquad (3)$$

where $\mu > 0$ is the unemployment insurance payment when unemployed, τ is the rate of tax collected to pay unemployment benefits, ℓ is time worked per employee and θ is white noise. (This specification of the unemployment insurance system is taken from the special issue of the Journal of Economic Dynamics and Control on solution methods for the Krusell-Smith model, Den Haan, Judd, and Juillard (2010).)

In our preferred version of the model, the aggregate wage rate

$$W_t = (1-\alpha)Z_t(\boldsymbol{K}_t/\ell \boldsymbol{L}_t)^{\alpha}, \qquad (4)$$

is determined by productivity Z_t (= 1), capital $\boldsymbol{K}_t$, and the aggregate supply of effective labor $\boldsymbol{L}_t$. The latter is again driven by two aggregate shocks:

$$\boldsymbol{L}_t = P_t \Xi_t, \qquad (5)$$

$$P_t = P_{t-1}\Psi_t, \qquad (6)$$

where P_t is aggregate permanent productivity, Ψ_t is the aggregate permanent shock and Ξ_t is the aggregate transitory shock.[11] Like ψ_t and θ_t, both Ψ_t and Ξ_t are assumed to be iid log-normally distributed with mean one.

Alternative specifications have been estimated in the extensive literature, and some authors argue that a better description of income dynamics is obtained by allowing for an MA(1) or MA(2) component in the transitory shocks, and by substituting AR(1) shocks for Friedman's "permanent" shocks. The relevant AR and MA coefficients have recently been estimated in a new paper of DeBacker, Heim, Panousi, Ramnath, and Vidangos (2013) using a much higher-quality (and larger) data source than any previously available for the U.S.: IRS tax records. The authors' point estimate for the size of the AR(1) coefficient is 0.98 (that is, very close to 1). Our view is that nothing of great substantive consequence hinges on whether the coefficient is 0.98 or 1.[12] ,[13] For modeling purposes, however, our task is considerably simpler both technically and to communicate to readers when we assume that the "persistent" shocks are in fact permanent.

This FBS aggregate income process differs substantially from that in the seminal paper of Krusell and Smith (1998), which assumes that the level of aggregate productivity has a first-order Markov structure, alternating between two states: $Z_t = 1 + \Delta^Z$ if the aggregate state is good and $Z_t = 1 - \Delta^Z$ if it is bad; similarly, $\boldsymbol{L}_t = 1 - u_t$ (unemployment rate) where $u_t = u^g$ if the state is good and $u_t = u^b$ if bad. The idiosyncratic and aggregate shocks are thus correlated; the law of large numbers implies that the number of unemployed individuals is u^g and u^b in good and bad times, respectively. The KS process for aggregate productivity shocks has little empirical foundation because the two-state Markov process is not flexible enough to match the empirical dynamics of

unemployment or aggregate income growth well. In addition, the KS process—unlike income measured in the data—has low persistence. Indeed, the KS process appears to have been intended by the authors as an illustration of how one might incorporate business cycles in principle, rather than a serious candidate for an empirical description of actual aggregate dynamics.

In contrast, our assumption that the structure of aggregate shocks resembles the structure of idiosyncratic shocks is valuable not only because it matches the data well, but also because it makes the model easier to solve. In particular, the elimination of the 'good' and 'bad' aggregate states reduces the number of state variables to two (individual market resources m_t and aggregate capital K_t) after normalizing the model appropriately. Employment status is not a state variable (in eliminating the aggregate states, we also shut down unemployment persistence, which depends on the aggregate state in the KS model). As a result, given parameter values, solving the model with the FBS aggregate shocks is much faster than solving the model with the KS aggregate shocks.[14] Because of its familiarity in the literature, we will usually present comparisons of the results obtained using both alternative descriptions of the aggregate income process. Nevertheless, our preference is for the FBS process, not only because it yields a much more tractable model but also because it much more closely replicates empirical aggregate dynamics that have been targeted by a large applied literature.

4 Modeling Wealth Heterogeneity: The Role of Shocks and Preferences

This section describes the key features of the framework in the absence of aggregate uncertainty.[15] Here, we allow for heterogeneity in time preference rates, and estimate the extent of such heterogeneity by matching the model-implied distribution of wealth to the observed distribution.[16],[17]

4.1 Homogeneous Impatience: The 'β-Point Model'

The economy consists of a continuum of households of mass one distributed on the unit interval, each of which maximizes expected discounted utility from consumption,

$$\max \mathbb{E}_t \sum_{n=0}^{\infty} \beta^n \mathrm{u}(\boldsymbol{c}_{t+n})$$

for a CRRA utility function $\mathrm{u}(\cdot) = \cdot^{1-\rho}/(1-\rho)$.[18] The household consumption functions $\{\mathrm{c}_{t+n}\}_{n=0}^{\infty}$ satisfy:

$$\begin{aligned}
\mathrm{v}(m_t) &= \max_{\mathrm{c}_t} \ \mathrm{u}(\mathrm{c}_t) + \beta \mathbb{D} \mathbb{E}_t \left[\psi_{t+1}^{1-\rho} \mathrm{v}(m_{t+1})\right] && (7)\\
&\text{s.t.} \\
a_t &= m_t - c_t, && (8)\\
k_{t+1} &= a_t/(\mathbb{D}\psi_{t+1}), && (9)\\
m_{t+1} &= (\gamma + r)k_{t+1} + \xi_{t+1}, && (10)\\
a_t &\geq 0, && (11)
\end{aligned}$$

where the variables are divided by the level of permanent income $\boldsymbol{p}_t = p_t \mathrm{W}$, so that when aggregate shocks are shut down the only state variable is (normalized) cash-on-hand m_t.[19]

Households die with a constant probability D ≡ 1 - $\mathbb{D}$ between periods.[20] Consequently, the effective discount factor is $\beta\mathbb{D}$ (in (7)). The effective interest rate is ($\daleth$ + r)$\mathbb{D}$, where $\daleth$ = 1 - δ denotes the depreciation factor for capital and r is the interest rate (which here is time-invariant and thus has no time subscript).[21] The production function is Cobb–Douglas:

$$Z\boldsymbol{K}^{\alpha}(\ell\boldsymbol{L})^{1-\alpha}, \tag{12}$$

where Z is aggregate productivity, $\boldsymbol{K}$ is capital, ℓ is time worked per employee and $\boldsymbol{L}$ is employment. The wage rate and the interest rate are equal to the marginal product of labor and capital, respectively.

As shown in (8)–(10), the evolution of household's market resources m_t can be broken up into three steps:

1. Assets at the end of the period equal to market resources minus consumption:

$$a_t = m_t - c_t.$$

2. Next period's capital is determined from this period's assets via

$$k_{t+1} = a_t/(\mathbb{D}\psi_t).$$

3. Finally, the transition from the beginning of period t + 1 when capital has not yet been used to produce output, to the middle of that period, when output has been produced and incorporated into resources but has not yet been consumed is:

$$m_{t+1} = (\daleth + r)k_{t+1} + \xi_{t+1}.$$

Solving maximization (7)–(11) gives the optimal consumption rule. A target wealth-to-permanent-income ratio exists if a death-modified version of Carroll (2011)'s 'Growth Impatience Condition' holds (see Appendix C of Carroll, Slacalek, and Tokuoka (2013) for derivation):

$$\frac{(\mathsf{R}\beta)^{1/\rho}\,\mathbb{E}[\psi^{-1}]\mathbb{D}}{\Gamma} < 1, \tag{13}$$

where R = $\daleth$ + r, and Γ is labor productivity growth (the growth rate of permanent income).

4.2 Calibration

Table 2: Parameter Values and Steady State

Description	Parameter	Value	Source
Representative agent model			
Time discount factor	β	0.99	JEDC (2010)
Coef of relative risk aversion	ρ	1	JEDC (2010)
Capital share	α	0.36	JEDC (2010)
Depreciation rate	δ	0.025	JEDC (2010)
Time worked per employee	ℓ	1/0.9	JEDC (2010)
Steady state			
Capital/(quarterly output) ratio	$\boldsymbol{KY}$	10.26	JEDC (2010)
Effective interest rate	r - δ	0.01	JEDC (2010)

Wage rate	W	2.37	JEDC (2010)
Heterogenous agents models			
Unempl insurance payment	μ	0.15	JEDC (2010)
Probability of death	D	0.00625	Yields 40-year working life
FBS income shocks			
Variance of log $\theta_{t,i}$	σ_θ^2	0.010 × 4	Carroll (1992), Carroll, Slacalek, and Tokuoka (2013)
Variance of log $\psi_{t,i}$	σ_ψ^2	0.010⁄4	Carroll (1992), DeBacker et al. (2013), Carroll, Slacalek, and Tokuoka (2013)
Unemployment rate	u	0.07	Mean in JEDC (2010)
Variance of log Ξ_t	σ_Ξ^2	0.00001	Authors' calculations
Variance of log Ψ_t	σ_Ψ^2	0.00004	Authors' calculations
KS income shocks			
Aggregate shock to productivity	Δ^Z	0.01	Krusell and Smith (1998)
Unemployment (good state)	u^g	0.04	Krusell and Smith (1998)
Unemployment (bad state)	u^b	0.10	Krusell and Smith (1998)
Aggregate transition probability		0.125	Krusell and Smith (1998)

Notes: The models are calibrated at the quarterly frequency, and the steady state values are calculated on a quarterly basis.

We calibrate the standard elements of the model using the parameter values used for the papers in the special issue of the Journal of Economic Dynamics and Control (2010) devoted to comparing solution methods for the KS model (the parameters are reproduced for convenience in Table 2). The model is calibrated at the quarterly frequency.

We calibrate the FBS income process as follows. The variances of idiosyncratic components are taken from Carroll (1992) because those numbers are representative of the large subsequent

empirical literature all the way through the new paper by DeBacker, Heim, Panousi, Ramnath, and Vidangos (2013) whose point estimate of the variance of the permanent shock almost exactly matches the calibration in Carroll (1992).[22]

The variances of the aggregate income process were estimated as follows, using U.S. NIPA labor income, constructed as wages and salaries plus transfers minus personal contributions for social insurance. We first calibrate the signal-to-noise ratio $\varsigma \equiv \sigma_\Psi^2 / \sigma_\Xi^2$ so that the first autocorrelation of the process, generated using the logged versions of equations (5)–(6), is 0.96.[23] [24] Differencing equation (5) and expressing the second moments yields

$$\begin{aligned} \text{var}\left(\Delta \log \boldsymbol{L}_t\right) &= \sigma_\Psi^2 + 2\sigma_\Xi^2, \\ &= (\varsigma + 2)\sigma_\Xi^2. \end{aligned}$$

Given $\text{var}\left(\Delta \log \boldsymbol{L}_t\right)$ and ς we identify $\sigma_\Xi^2 = \text{var}\left(\Delta \log \boldsymbol{L}_t\right)/(\varsigma + 2)$ and $\sigma_\Psi^2 = \varsigma\sigma_\Xi^2$. The strategy yields the following estimates: $\varsigma = 4$, $\sigma_\Psi^2 = 4.29 \times 10^{-5}$ and $\sigma_\Xi^2 = 1.07 \times 10^{-5}$ (given in Table 2). This parametrization of the aggregate income process yields income dynamics that match the same aggregate statistics that are matched by standard exercises in the real business cycle literature including Jermann (1998), Boldrin, Christiano, and Fisher (2001), and Chari, Kehoe, and McGrattan (2005). It also fits well the broad conclusion of the large literature on unit roots of the 1980s, which found that it is virtually impossible to reject the existence of a permanent component in aggregate income series (see Stock (1986) for a review).

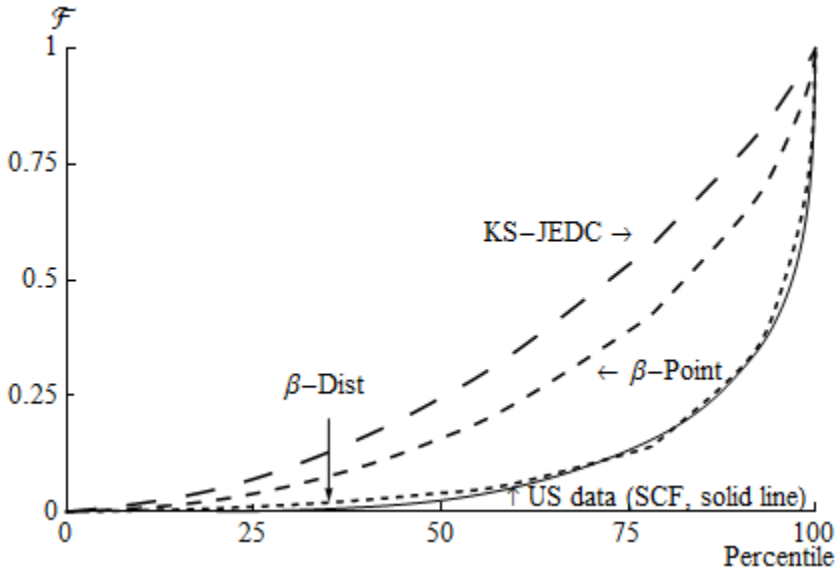
4.3 Wealth Distribution in the 'β-Point' Model

To finish calibrating the model, we assume (for now) that all households have an identical time preference factor $\beta = \grave{\beta}$ (corresponding to a point distribution of β) and henceforth call this specification the 'β-Point' model. With no aggregate uncertainty, we follow the procedure of the papers in the JEDC volume by backing out the value of $\grave{\beta}$ for which the steady-state value of the capital-to-output ratio ($\boldsymbol{KY}$) matches the value that characterized the steady-state of the perfect foresight version of the model; $\grave{\beta}$ turns out to be 0.9899 (at a quarterly rate).

Carroll, Slacalek, and Tokuoka (2013) show that the β-Point model matches the empirical wealth distribution substantially better than the version of the Krusell and Smith (1998) model analyzed in the Journal of Economic Dynamics and Control (2010) volume, which we call 'KS-JEDC.'[25] For example, while the top 1 percent households living in the KS-JEDC model own only 3 percent of total wealth,[26] those living in the β-Point are much richer, holding roughly 10 percent of total wealth. This improvement is driven by the presence of the permanent shock to income, which generates heterogeneity in the level of wealth because, while all households have the same target wealth/permanent income *ratio*, the equilibrium dispersion in the level of permanent income leads to a corresponding equilibrium dispersion in the level of wealth.

Figure 1 illustrates these results by plotting the wealth Lorenz curves implied by alternative models. Introducing the FBS shocks into the framework makes the Lorenz curve for the KS-JEDC model move roughly one third of the distance toward the data from the 2004 *Survey of Consumer Finances*,[27] to the dashed curve labeled β-Point.

Figure 1: Distribution of Net Worth (Lorenz Curve)



Notes: The solid curve shows the distribution of net worth in the 2004 Survey of Consumer Finances.

However, the wealth heterogeneity in the β-Point model essentially just replicates heterogeneity in permanent income (which accounts for most of the heterogeneity in total income); for example the Gini coefficient for permanent income measured in the *Survey of Consumer Finances* of roughly 0.5 is similar to that for wealth generated in the β-Point model. Since the empirical distribution of wealth (which has the Gini coefficient of around 0.8) is considerably more unequal than the distribution of income (or permanent income), the setup only captures part of the wealth heterogeneity in the data, especially at the top.

4.4 Heterogeneous Impatience: 'β-Dist Model'

Because we want a modeling framework that matches the fact that wealth inequality substantially exceeds income inequality, we need to introduce an additional source of heterogeneity (beyond heterogeneity in permanent and transitory income). We accomplish this by introducing heterogeneity in impatience. Each household is now assumed to have an idiosyncratic (but fixed) time preference factor. We think of this assumption as reflecting not only actual variation in pure rates of time preference across people, but also as reflecting other differences (in age, income growth expectations, investment opportunities, tax schedules, risk aversion, and other variables) that are not explicitly incorporated into the model.

To be more concrete, take the example of age. A robust pattern in most countries is that income grows much faster for young people than for older people. Our "death-modified growth impatience condition" (13) captures the intuition that people facing faster income growth tend to act, financially, in a more 'impatient' fashion than those facing lower growth. So we should expect young people to have lower target wealth-to-income ratios than older people. Thus, what we are capturing by allowing heterogeneity in time preference factors is probably also some portion of the difference in behavior that (in truth) reflects differences in age instead of in pure time preference factors. Some of what we achieve by allowing heterogeneity in β could alternatively be introduced

into the model if we had a more complex specification of the life cycle that allowed for different income growth rates for households of different ages.[28]

One way of gauging a model's predictions for wealth inequality is to ask how well it is able to match the proportion of total net worth held by the wealthiest 20, 40, 60, and 80 percent of the population. We follow other papers (in particular Castaneda, Diaz-Gimenez, and Rios-Rull (2003)) in matching these statistics.[29]
Our specific approach is to replace the assumption that all households have the same time preference factor with an assumption that, for some dispersion ∇, time preference factors are distributed uniformly in the population between $\grave{\beta}$-∇ and $\grave{\beta}$+ ∇ (for this reason, the model is referred to as the 'β-Dist' model). Then, using simulations, we search for the values of $\grave{\beta}$ and ∇ for which the model best matches the fraction of net worth held by the top 20, 40, 60, and 80 percent of the population, while at the same time matching the aggregate capital-to-output ratio from the perfect foresight model. Specifically, defining w_i and ω_i as the proportion of total aggregate net worth held by the top i percent in our model and in the data, respectively, we solve the following minimization problem:

$$\{\grave{\beta}, \nabla\} = \arg\min_{\{\beta,\nabla\}} \sum_{i\,=\,20,\,40,\,60,\,80} \left(w_i(\beta, \nabla) - \omega_i\right)^2 \qquad (14)$$

subject to the constraint that the aggregate wealth (net worth)-to-output ratio in the model matches the aggregate capital-to-output ratio from the perfect foresight model ($\boldsymbol{K}_{PF}/\boldsymbol{Y}_{PF}$):[30]

$$\boldsymbol{K}/\boldsymbol{Y} \;=\; \boldsymbol{K}_{PF}/\boldsymbol{Y}_{PF}. \qquad (15)$$

The solution to this problem is {$\grave{\beta}$,∇} = {0.9876, 0.0060}, so that the discount factors are evenly spread roughly between 0.98 and 0.99.[31]

The introduction of even such a relatively modest amount of time preference heterogeneity sharply improves the model's fit to the targeted proportions of wealth holdings, bringing it reasonably in line with the data (Figure 1). The ability of the model to match the targeted moments does not, of course, constitute a formal test, except in the loose sense that a model with such strong structure might have been unable to get nearly so close to four target wealth points with only one free parameter.[32] But the model also sharply improves the fit to locations in the wealth distribution that were not explicitly targeted; for example, the net worth shares of the top 10 percent and the top 1 percent are also included in the table, and the model performs reasonably well in matching them.

Of course, Krusell and Smith (1998) were well aware that their baseline model provides a poor match to the wealth distribution. In response, they examined whether inclusion of a form of discount rate heterogeneity could improve the model's match to the data. Specifically, they assumed that the discount factor takes one of the three values (0.9858, 0.9894, and 0.9930), and that agents anticipate that their discount factor might change between these values according to a Markov process. As they showed, the model with this simple form of heterogeneity did improve the model's ability to match the wealth holdings of the top percentiles. Indeed, unpublished results kindly provided by the authors show their model of heterogeneity went a bit too far: it concentrated almost all of the net worth in the top 20 percent of the population. By comparison, our model β-Dist does a notably better job matching the data across the entire span of wealth percentiles.

The reader might wonder why we do not simply adopt the KS specification of heterogeneity in time preference factors, rather than introducing our own novel (though simple) form of heterogeneity. The principal answer is that our purpose here is to define a method of explicitly matching the model to the data via statistical estimation of a parameter of the distribution of heterogeneity, letting the data speak flexibly to the question of the extent of the heterogeneity required to match model to data. Krusell and Smith were not estimating a distribution in this manner; estimation of their framework would have required searching for more than one parameter, and possibly as many as three of four. Indeed, had they intended to estimate parameters, they might have chosen a method more like ours. A second point is that, having introduced finite horizons in order to yield an ergodic distribution of permanent income, it would be peculiar to layer on top of the stochastic death probability a stochastic probability of changing one's time preference factor within the lifetime; Krusell and Smith motivated their differing time preference factors as reflecting different preferences of alternating generations of a dynasty, but with our finite horizons assumption we have eliminated the dynastic interpretation of the model. Having said all of this, the common point across the two papers is that a key requirement to make the model fit the wealth data is a form of heterogeneity that leads different households to have different target levels of wealth.

5 The Aggregate Marginal Propensity to Consume

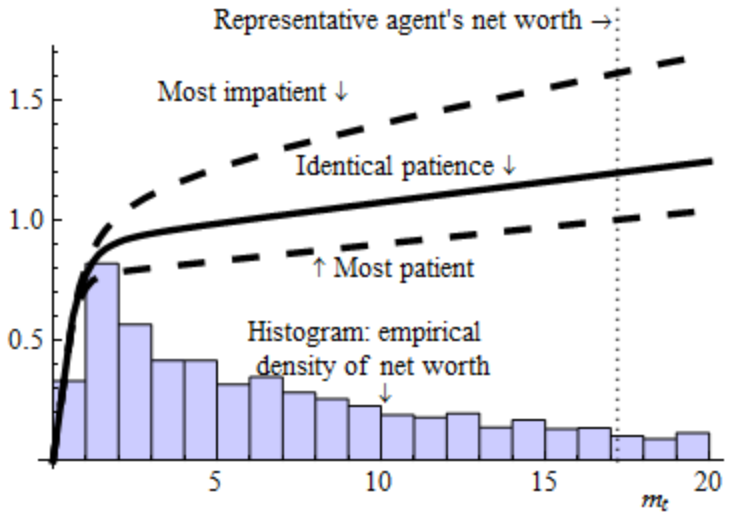
Having constructed a model with a realistic household income process which is able to reproduce steady-state wealth heterogeneity in the data, we now turn on aggregate shocks and investigate the model's implications about relevant macroeconomic questions. In particular, we ask whether a model that manages to match the distribution of wealth has similar, or different, implications from the KS-JEDC or representative agent models for the reaction of aggregate consumption to an economic 'stimulus' payment.

Specifically, we pose the question as follows. The economy has been in its steady-state equilibrium leading up to date t. Before the consumption decision is made in that period, the government announces the following plan: effective immediately, every household in the economy will receive a one-off 'stimulus check' worth some modest amount $\$x$ (financed by a tax on unborn future generations).[33] Our question is: *By how much will aggregate consumption increase?*

5.1 Matching Net Worth

In theory, the distribution of wealth across recipients of the stimulus checks has important implications for aggregate MPC out of transitory shocks to income. To see why, the solid line of Figure 2 plots our β-Point model's individual consumption function using the FBS aggregate income process, with the horizontal axis being cash on hand normalized by the level of (quarterly) permanent income. Because the households with less normalized cash have higher MPCs, the average MPC is higher when a larger fraction of households has less (normalized) cash on hand.

Figure 2: Empirical Wealth Distribution and Consumption Functions of β-Point and β-Dist Models



Notes: The solid curve shows the consumption function for β-Point model. The dashed curves show the consumption functions for the most patient and the least patient consumers for β-Dist model. The histogram shows the empirical distribution of net worth (m_t) in the Survey of Consumer Finances of 2004.

There are many more households with little wealth in our β-Point model than in the KS-JEDC model, as illustrated by comparison of the short-dashing and the long-dashing lines in Figure 1.

The greater concentration of wealth at the bottom in the β-Point model, which mirrors the data (see the histogram in Figure 2), should produce a higher average MPC, given the concave consumption function.

Indeed, the average MPC out of the transitory income ('stimulus check') in our β-Point model is 0.1 in annual terms (second column of Table 3),[34] about double the value in the KS-JEDC model (0.05) (first column of the table) or the perfect foresight partial equilibrium model with parameters matching our baseline calibration (0.04). Our β-Dist model (third column of the table) produces an even higher average MPC (0.23), since in the β-Dist model there are more households who possess less wealth, are more impatient, and have higher MPCs (Figure 1 and dashed lines in Figure 2). However, this is still at best only at the lower bound of empirical MPC estimates, which are typically between 0.2–0.6 or even higher (see Table 1).

Table 3: Average (Aggregate) Marginal Propensity to Consume in Annual Terms

	Krusell–Smith (KS) Aggregate Process			Friedman/Buffer Stock (FBS) Aggregate Process	
Model	KS-JEDC Our Solution	β-Point	β-Dist	β-Dist	β-Dist

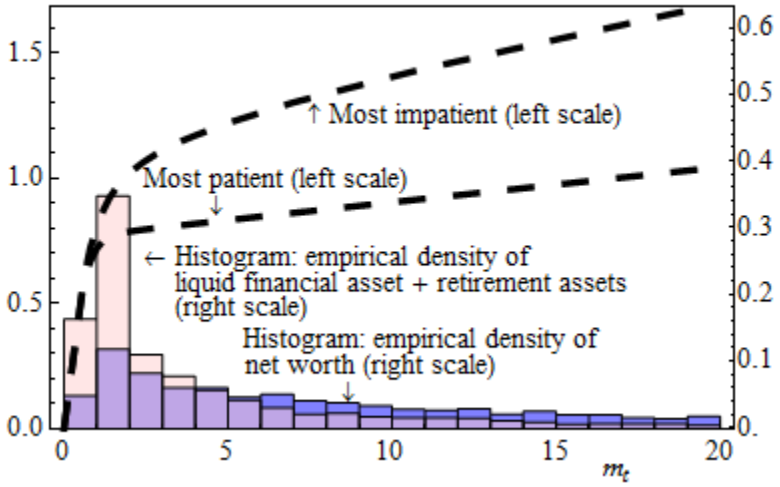
Wealth Measure		Net Worth	Net Worth	Liquid Financial and Retirement Assets	Net Worth	Liquid Financial and Retirement Assets
Overall average	0.05	0.10	0.23	0.43	0.20	0.42
By wealth/permanent income ratio						
Top 1%	0.04	0.06	0.05	0.12	0.05	0.12
Top 10%	0.04	0.06	0.06	0.12	0.06	0.12
Top 20%	0.04	0.06	0.06	0.13	0.06	0.13
Top 40%	0.04	0.06	0.08	0.20	0.06	0.17
Top 50%	0.05	0.07	0.09	0.23	0.06	0.22
Top 60%	0.04	0.07	0.12	0.28	0.09	0.24
Bottom 50%	0.05	0.13	0.35	0.59	0.32	0.58
By income						
Top 1%	0.05	0.08	0.12	0.17	0.16	0.36
Top 10%	0.05	0.08	0.15	0.27	0.17	0.36
Top 20%	0.05	0.09	0.16	0.31	0.17	0.37
Top 40%	0.05	0.10	0.18	0.34	0.19	0.38
Top 50%	0.05	0.11	0.19	0.35	0.18	0.39
Top 60%	0.05	0.10	0.19	0.37	0.20	0.39
Bottom 50%	0.05	0.09	0.27	0.50	0.22	0.45
By employment status						
Employed	0.05	0.09	0.20	0.39	0.19	0.39
Unemployed	0.06	0.23	0.54	0.80	0.41	0.73
Time preference parameters‡						
$\grave{\beta}$		0.9899	0.9848	0.9570	0.9876	0.9636
∇			0.0094	0.0210	0.0060	0.0133

Notes: Annual MPC is calculated by 1 - (1-quarterly MPC)^4. ‡: Discount factors are uniformly distributed over the interval [$\grave{\beta}$ -∇,$\grave{\beta}$ + ∇].

Comparison of columns 3 and 5 of Table 3 makes it clear that for the purpose of backing out the aggregate MPC, the particular form of the aggregate income process is not essential; both in qualitative and in quantitative terms the aggregate MPC and its breakdowns for the KS and the FBS aggregate income specification lie close to each other. This finding is in line with a large literature sparked by Lucas (1985) about the modest welfare cost of the aggregate fluctuations associated with business cycles and with the calibration of Table 2, in which variance of aggregate shocks is roughly two orders of magnitude smaller than variance of idiosyncratic shocks. (Of

course, if one consequence of business cycles is to increase the magnitude of idiosyncratic shocks, as suggested for example by McKay and Papp (2011), Guvenen, Ozkan, and Song (2012) and Blundell, Low, and Preston (2013), the costs of business cycles could be much larger than in traditional calculations that examine only the consequences of aggregate shocks.)

Figure 3: Empirical Distribution of Liquid Financial Assets + Retirement Assets and Consumption Functions of β-Dist Model



Notes: The dashed curves show the consumption functions for the most patient and the least patient consumers for β-Dist model. The blue (dark grey) and pink (light grey) histograms show the empirical distributions of net worth and liquid financial and retirement assets, respectively, in the Survey of Consumer Finances of 2004.

5.2 Matching Liquid Assets

Thus far, we have been using total household net worth as our measure of wealth. Implicitly, this assumes that all of the household's debt and asset positions are perfectly liquid and that, say, a household with home equity of $50,000 and bank balances of $2,000 (and no other balance sheet items) will behave in every respect similarly to a household with home equity of $10,000 and bank balances of $42,000. This seems implausible. The home equity is more illiquid (tapping it requires, at the very least, obtaining a home equity line of credit, with the attendant inconvenience and expense of appraisal of the house and some paperwork).

Otsuka (2004) formally analyzes the optimization problem of a consumer with a FBS income process who can invest in an illiquid but higher-return asset (think housing), or a liquid but lower-return asset (cash), and shows, unsurprisingly, that the annual marginal propensity to consume out of shocks to liquid assets is higher than the MPC out of shocks to illiquid assets. Her results would presumably be even stronger if she had permitted households to hold much of their wealth in illiquid forms (housing, pension savings), for example, as a mechanism to overcome self-control problems (see Laibson (1997) and many others).[35]

These considerations suggest that it may be more plausible, for purposes of extracting predictions

about the MPC out of stimulus checks, to focus on matching the distribution of liquid financial and retirement assets across households. The inclusion of retirement assets is arguable, but a case for inclusion can be made because in the U.S. retirement assets such as IRA's and 401(k)'s can be liquidated under a fairly clear rule (e.g., a penalty of 10 percent of the balance liquidated).

Table 4: Proportion of Wealth Held by Percentile (in Percent)

	Net Worth	Liquid Financial and Retirement Assets
Top 1%	33.9	34.6
Top 10%	69.7	75.3
Top 20%	82.9	88.3
Top 40%	94.7	97.5
Top 60%	99.0	99.6
Top 80%	100.2	100.0

Notes: The data source is the 2004 Survey of Consumer Finances.

When we ask the model to estimate the time preference factors that allow it to best match the distribution of liquid financial and retirement assets (instead of net worth),[36] estimated parameter values are $\{\grave{\beta}, \nabla\} = \{0.9570, 0.0210\}$ under the KS aggregate income process and the average MPC is 0.44 (fourth column of the table), which lies at the middle of the range typically reported in the literature (see Table 1), and is considerably higher than when we match the distribution of net worth. This reflects the fact that matching the more skewed distribution of liquid financial and retirement assets than that of net worth (Table 4 and Figure 3) requires a wider distribution of the time preference factors, ranging between 0.94 and 0.975, which produces even more households with little wealth.[37] The estimated distribution of discount factors lies below that obtained by matching net worth and is considerably more dispersed because of substantially lower median and more unevenly distributed liquid financial and retirement assets (compared to net worth).

Figure 4: Distribution of MPCs Across Households

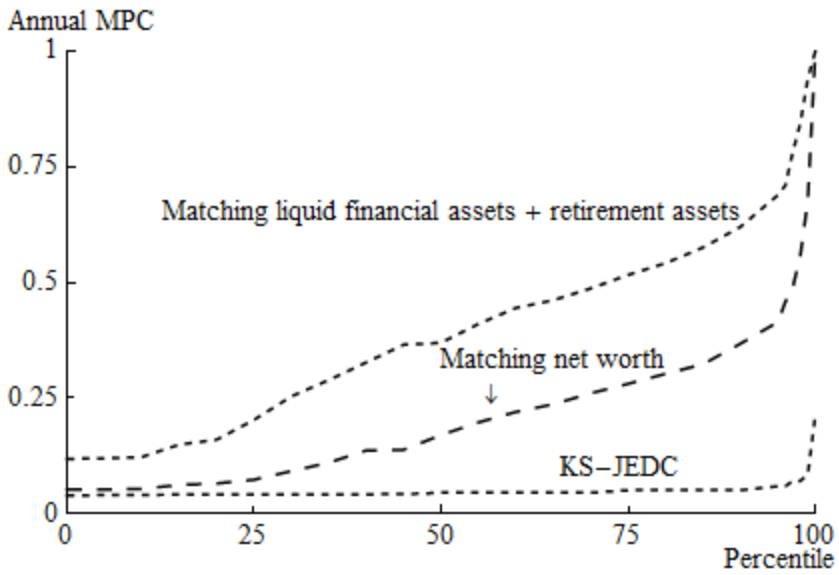


Figure 4 shows the cumulative distribution functions of MPCs for the KS-JEDC model and the β-Dist models (under the KS aggregate income shocks) estimated to match, first, the empirical distribution of net worth and, alternatively, of liquid financial and retirement assets.[38] The figure illustrates that the MPCs for KS-JEDC model are concentrated tightly around 0.05, which sharply contrasts with the results for the β-Dist models. Because the latter two models match the empirical wealth distribution, they imply that a substantial fraction of consumers has very little wealth.

Table 3 illustrates the distribution of MPCs by wealth, income, and employment status. In contrast to the KS-JEDC model, the β-Point and in particular β-Dist models generate a wide distribution of marginal propensities. Given the considerable concavity of the theoretical consumption function in the relevant region, these results indicate that the aggregate response to a stimulus program will depend greatly upon which households receive the stimulus payments. Furthermore, unlike the results from the baseline KS-JEDC model or from a representative agent model, the results from these simulations are easily consistent with the empirical estimates of aggregate MPCs in Table 1 and the evidence that households with little liquid wealth and without high past income have high MPCs.[39]

5.3 MPC over the Business Cycle

Because our models include FBS or KS aggregate shocks, we can investigate how the economy's average MPC and its distribution across households varies over the business cycle. Table 5 reports the results for the following experiments with the β-Dist models calibrated to the net worth distribution (and compares them to the baseline results from Table 3). For the model with KS aggregate shocks, in which recessions/expansions can be defined as bad/good realizations of the aggregate state:

1. 'Expansions vs. Recessions': $Z_t = 1 + \Delta^Z$ vs. $Z_t = 1 - \Delta^Z$.
2. 'Entering Recession': Bad realization of the aggregate state directly preceded by a good one: $Z_t = 1 - \Delta^Z$ for which $Z_{t-1} = 1 + \Delta^Z$.

For the model with FBS aggregate shocks, we consider large bad realizations of the aggregate shock:

1. ‘Large Bad Permanent Aggregate Shock’: bottom 1 percent of the distribution in the permanent aggregate shock
2. ‘Large Bad Transitory Aggregate Shock’: bottom 1 percent of the distribution in the transitory aggregate shock

Table 5: Marginal Propensity to Consume over the Business Cycle

Model	Krusell–Smith (KS): β-Dist				Friedman/Buffer Stock (FBS): β-Dist		
Scenario	Baseline	Recession	Expansion	Entering Recession	Baseline	Large Bad Permanent Aggregate Shock	Large Bad Transitory Aggregate Shock
Overall average	0.23	0.25	0.21	0.23	0.20	0.20	0.21
By wealth/permanent income ratio							
Top 1%	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Top 10%	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Top 20%	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Top 40%	0.08	0.08	0.08	0.08	0.06	0.06	0.06
Top 50%	0.09	0.10	0.09	0.09	0.06	0.06	0.09
Top 60%	0.12	0.12	0.11	0.12	0.09	0.09	0.09
Bottom 50%	0.35	0.38	0.32	0.35	0.32	0.32	0.32
By income							
Top 1%	0.12	0.13	0.11	0.13	0.16	0.16	0.17
Top 10%	0.15	0.16	0.15	0.16	0.17	0.17	0.17
Top 20%	0.16	0.17	0.16	0.17	0.17	0.17	0.18
Top 40%	0.18	0.19	0.18	0.18	0.19	0.19	0.19
Top 50%	0.19	0.20	0.18	0.19	0.18	0.19	0.20
Top	0.19	0.20	0.19	0.20	0.20	0.20	0.20

60% Bottom 50%	0.27	0.30	0.24	0.27	0.22	0.21	0.22
By employment status							
Employed	0.20	0.20	0.20	0.20	0.19	0.19	0.19
Unemployed	0.54	0.56	0.51	0.47	0.41	0.41	0.41

Notes: Annual MPC is calculated by 1 - (1-quarterly MPC)^4. The scenarios are calculated for the β-Dist models calibrated to the net worth distribution. For the KS aggregate shocks, the results are obtained by running the simulation over 1,000 periods, and the scenarios are defined as (i) 'Recessions/Expansions': bad/good realization of the aggregate state, $1 - \Delta^Z/1 + \Delta^Z$; (ii) 'Entering Recession': bad realization of the aggregate state directly preceded by a good one: $Z_t = 1 - \Delta^Z$ for which $Z_{t-1} = 1 + \Delta^Z$. The 'baseline' KS results are reproduced from column 3 of Table 3. For the FBS aggregate shocks, the results are averages over 1,000 simulations, and the scenarios are defined as (i) 'Large Bad Permanent Aggregate Shock': bottom 1 percent of the distribution in the permanent aggregate shock; (ii) 'Large Bad Transitory Aggregate Shock': bottom 1 percent of the distribution in the transitory aggregate shock. The 'baseline' FBS results are reproduced from column 5 of Table 3.

In the KS setup, the aggregate MPC is countercyclical, ranging between 0.21 in expansions and 0.25 in recessions. The key reason for this business cycle variation lies in the fact that aggregate shocks are correlated with idiosyncratic shocks. The movements in the aggregate MPC are driven by the households at the bottom of the distributions of wealth and income, which are not adequately insured. MPCs for rich and employed households essentially do not change over the business cycle. The scenario 'Entering Recession' documents that the length of the recession matters, so that initially the MPCs remain close to the baseline values, and increase only slowly as recession persists.

In the FBS setup, the distribution of the MPC displays very little cyclical variation for both transitory and permanent aggregate shocks. This fact is caused because the precautionary behavior of households is driven essentially exclusively by idiosyncratic shocks, as these shocks are two orders of magnitude larger (in terms of variance) and because they are uncorrelated with aggregate shocks.

Of course, these results are obtained under the assumptions that the parameters and expectations in the models are constant, and that the wealth distribution is exogenous. These assumptions are likely counterfactual in events like the Great Recession, during which objects like expectations about the future income growth or the extent of uncertainty may well have changed.

As Figure 2 suggests, the aggregate MPC in our models is a result of an (inter-related) interaction between two objects: The distribution of wealth and the consumption function(s). During the Great

Recession, the distribution of net worth has shifted very substantially downward. Specifically, Bricker, Kennickell, Moore, and Sabelhaus (2012) document that over the 2007–2010 period median net worth fell 38.8 percent (in real terms).[40] *Ceteris paribus*, these dynamics resulted an increase in the aggregate MPC, as the fraction of wealth-poor, high-MPC households rose substantially.

It is also likely that the second object, the consumption function, changed as many of its determinants (such as the magnitude of income shocks[41]) have not remained unaffected by the recession. And, of course, once parameters are allowed to vary, one needs to address the question about how households form expectations about these parameters. These factors make it quite complex to investigate adequately the numerous interactions potentially relevant for the dynamics of the MPC over the business cycle. Consequently, we leave the questions about the extent of cyclicality of the MPC in more complicated settings for future research.

6 Conclusion

We have shown that a model with a realistic microeconomic income process and modest heterogeneity in time preference rates is able to match the observed degree of inequality in the wealth distribution. Because many households in our model accumulate very little wealth, the aggregate marginal propensity to consume out of transitory income implied by our model, roughly 0.2–0.4 depending on the measure of wealth we ask our model to target, is consistent with most of the large estimates of the MPC reported in the microeconomic literature. Indeed, some of the dispersion in MPC estimates from the microeconomic literature (where estimates range up to 0.75 or higher) might be explainable by the model's implication that there is no such thing as "the" MPC – the aggregate response to a transitory income shock should depend on details of the recipients of that shock in ways that the existing literature may not have been sensitive to (or may not have been able to measure). If some of the experiments reported in the literature reflected shocks that were concentrated in different regions of the wealth distribution than other experiments, considerable variation in empirical MPCs would be an expected consequence of the differences in the experiments.

Additionally, our work provides researchers with an easier framework for solving, estimating, and simulating economies with heterogeneous agents and realistic income processes than has heretofore been available. Although benefiting from the important insights of Krusell and Smith (1998), our framework is faster and easier to solve than the KS model or many of its descendants, and thus can be used as a convenient building block for constructing micro-founded models for policy-relevant analysis.

References

AGARWAL, SUMIT, CHUNLIN LIU, AND NICHOLAS S. SOULELES (2007): "The Response of Consumer Spending and Debt to Tax Rebates – Evidence from Consumer Credit Data," *Journal of Political Economy*, 115(6), 986–1019.

AGARWAL, SUMIT, AND WENLAN QUIAN (2013): "Consumption and Debt Response to Unanticipated Income Shocks: Evidence from a Natural Experiment in Singapore," IRES working paper 18, National University of Singapore.

BLANCHARD, OLIVIER J. (1985): "Debt, Deficits, and Finite Horizons," *Journal of Political Economy*, 93(2), 223–247.

BLUNDELL, RICHARD, HAMISH LOW, AND IAN PRESTON (2013): "Decomposing changes in income risk using consumption data," *Quantitative Economics*, 4(1), 1–37.
BLUNDELL, RICHARD, LUIGI PISTAFERRI, AND IAN PRESTON (2008): "Consumption Inequality and Partial Insurance," *American Economic Review*, 98(5), 1887–1921.
BLUNDELL, RICHARD, LUIGI PISTAFERRI, AND ITAY SAPORTA-EKSTEN (2012): "Consumption Inequality and Family Labor Supply," NBER Working Papers 18445, National Bureau of Economic Research, Inc.
BOLDRIN, MICHELE, LAWRENCE J. CHRISTIANO, AND JONAS D. FISHER (2001): "Habit Persistence, Asset Returns and the Business Cycle," *American Economic Review*, 91(1), 149–66.
BRICKER, JESSE, ARTHUR B. KENNICKELL, KEVIN B. MOORE, AND JOHN SABELHAUS (2012): "Changes in U.S. Family Finances from 2007 to 2010: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, 98(2), 1–80.
BRODA, CHRISTIAN, AND JONATHAN A. PARKER (2012): "The Economic Stimulus Payments of 2008 and the Aggregate Demand for Consumption," mimeo, Northwestern University.
BROWNING, MARTIN, AND M. DOLORES COLLADO (2001): "The Response of Expenditures to Anticipated Income Changes: Panel Data Estimates," *American Economic Review*, 91(3), 681–692.
CARROLL, CHRISTOPHER D. (1992): "The Buffer-Stock Theory of Saving: Some Macroeconomic Evidence," *Brookings Papers on Economic Activity*, 1992(2), 61–156, http://econ.jhu.edu/people/ccarroll/BufferStockBPEA.pdf. (2011): "Theoretical Foundations of Buffer Stock Saving," *Manuscript, Department of Economics, Johns Hopkins University*, http://econ.jhu.edu/people/ccarroll/papers/BufferStockTheory.
CARROLL, CHRISTOPHER D., JIRI SLACALEK, AND KIICHI TOKUOKA (2013): "Buffer-Stock Saving in a Krusell–Smith World," mimeo, Johns Hopkins University.
CASTANEDA, ANA, JAVIER DIAZ-GIMENEZ, AND JOSE-VICTOR RIOS-RULL (2003): "Accounting for the U.S. Earnings and Wealth Inequality," *Journal of Political Economy*, 111(4), 818–857.
CHARI, V. V., PATRICK J. KEHOE, AND ELLEN R. MCGRATTAN (2005): "A Critique of Structural VARs Using Real Business Cycle Theory," working paper 631, Federal Reserve Bank of Minneapolis.
CORONADO, JULIA LYNN, JOSEPH P. LUPTON, AND LOUISE M. SHEINER (2005): "The Household Spending Response to the 2003 Tax Cut: Evidence from Survey Data," FEDS discussion paper 32, Federal Reserve Board.
DEATON, ANGUS S. (1991): "Saving and Liquidity Constraints," *Econometrica*, 59, 1221–1248. (1992): *Understanding Consumption*. Oxford University Press, New York.
DEBACKER, JASON, BRADLEY HEIM, VASIA PANOUSI, SHANTHI RAMNATH, AND IVAN VIDANGOS (2013): "Rising Inequality: Transitory or Permanent? New Evidence from a Panel of US Tax Returns," *mimeo*.
DEN HAAN, WOUTER J., KENNETH L. JUDD, AND MICHEL JUILLARD (2010): "Computational Suite of Models with Heterogeneous Agents: Incomplete Markets and Aggregate Uncertainty," *Journal of Economic Dynamics and Control*, 34(1), 1–3.
FRIEDMAN, MILTON A. (1957): *A Theory of the Consumption Function*. Princeton University Press.
GUVENEN, FATIH, SERDAR OZKAN, AND JAE SONG (2012): "The Nature of

Countercyclical Income Risk," Working Paper 18035, National Bureau of Economic Research.
HAUSMAN, JOSHUA K. (2012): "Fiscal Policy and Economic Recovery: The Case of the 1936 Veterans' Bonus," mimeo, University of California, Berkeley.
HSIEH, CHANG-TAI (2003): "Do Consumers React to Anticipated Income Changes? Evidence from the Alaska Permanent Fund," *American Economic Review*, 93(1), 397–405.
JAPPELLI, TULLIO, AND LUIGI PISTAFERRI (2010): "The Consumption Response to Income Changes," *The Annual Review of Economics*, 2, 479–506. (2013): "Fiscal Policy and MPC Heterogeneity," discussion paper 9333, CEPR.
JERMANN, URBAN J. (1998): "Asset Pricing in Production Economies," *Journal of Monetary Economics*, 41(2), 257–75.
JOHNSON, DAVID S., JONATHAN A. PARKER, AND NICHOLAS S. SOULELES (2006): "Household Expenditure and the Income Tax Rebates of 2001," *American Economic Review*, 96(5), 1589–1610. (2009): "The Response of Consumer Spending to Rebates During an Expansion: Evidence from the 2003 Child Tax Credit," working paper, The Wharton School.
JOURNAL OF ECONOMIC DYNAMICS AND CONTROL (2010): "Computational Suite of Models with Heterogeneous Agents: Incomplete Markets and Aggregate Uncertainty," *edited by Wouter J. Den Haan, Kenneth L. Judd, Michel Juillard*, 34(1), 1–100.
KAPLAN, GREG (2012): "Inequality and the Life Cycle," *Quantitative Economics*, 3(3), 471–525.
KAPLAN, GREG, AND GIOVANNI L. VIOLANTE (2011): "A Model of the Consumption Response to Fiscal Stimulus Payments," *NBER Working Paper Number W17338*.
KEYNES, JOHN MAYNARD (1936): *The General Theory of Employment, Interest, and Money*. Harcourt, Brace.
KREINER, CLAUS THUSTRUP, DAVID DREYER LASSEN, AND SØREN LETH-PETERSEN (2012): "Heterogeneous Responses and Aggregate Impact of the 2001 Income Tax Rebates," discussion paper 9161, CEPR.
KRUSELL, PER, AND ANTHONY A. SMITH (1998): "Income and Wealth Heterogeneity in the Macroeconomy," *Journal of Political Economy*, 106(5), 867–896.
LAIBSON, DAVID (1997): "Golden Eggs and Hyperbolic Discounting," *Quarterly Journal of Economics*, CXII(2), 443–477.
LOW, HAMISH, COSTAS MEGHIR, AND LUIGI PISTAFERRI (2010): "Wage Risk and Employment Over the Life Cycle," *American Economic Review*, 100(4), 1432–1467.
LUCAS, ROBERT E. (1985): *Models of Business Cycles, Yrjo Jahnsson Lectures*. Basil Blackwell, Oxford.
LUSARDI, ANNAMARIA (1996): "Permanent Income, Current Income, and Consumption: Evidence from Two Panel Data Sets," *Journal of Business and Economic Statistics*, 14(1), 81–90.
MCKAY, ALISDAIR, AND TAMAS PAPP (2011): "Accounting for Idiosyncratic Wage Risk Over the Business Cycle," working paper 28, Boston University.
MISRA, KANISHA, AND PAOLO SURICO (2011): "Heterogeneous Responses and Aggregate Impact of the 2001 Income Tax Rebates," discussion paper 8306, CEPR.
MOFFITT, ROBERT, AND PETER GOTTSCHALK (2011): "Trends in the Covariance Structure of Earnings in the U.S.: 1969–1987," *Journal of Economic Inequality*, 9, 439–459, doi: 10.1007/s10888-010-9154-z.
OTSUKA, MISUZU (2004): "Household Portfolio Choice with Illiquid Assets," PhD dissertation, Johns Hopkins University.
PARKER, JONATHAN (1999): "The Reaction of Household Consumption to Predictable

Changes in Social Security Taxes," *American Economic Review*, Vol 89(4), 959–73.
PARKER, JONATHAN A., NICHOLAS S. SOULELES, DAVID S. JOHNSON, AND ROBERT MCCLELLAND (2011): "Consumer Spending and the Economic Stimulus Payments of 2008," *NBER Working Paper Number W16684*.
PISTAFERRI, LUIGI, AND ITAY SAPORTA-EKSTEN (2012): "Changes in the Income Distribution and Aggregate Consumption," working paper 11, Ministry of Economy and Finance, Italy.
SAHM, CLAUDIA R., MATTHEW D. SHAPIRO, AND JOEL B. SLEMROD (2010): "Household Response to the 2008 Tax Rebate: Survey Evidence and Aggregate Implications," *Tax Policy and the Economy*, 24, 69–110.
SHAPIRO, MATTHEW D., AND JOEL SLEMROD (2003): "Consumer Response to Tax Rebates," *American Economic Review*, 93(1), 381–396. (2009): "Did the 2008 Tax Rebates Stimulate Spending?," *Manuscript, University of Michigan*, http://www-personal.umich.edu/~shapiro/papers/Rebate2008-2008-12-27-assa-draft.pdf.
SOULELES, NICHOLAS S. (1999): "The Response of Household Consumption to Income Tax Refunds," *American Economic Review*, 89(4), 947–958. (2002): "Consumer Response to the Reagan Tax Cuts," *Journal of Public Economics*, 85, 99–120.
STOCK, JAMES H. (1986): "Unit roots, structural breaks and trends," in *Handbook of Econometrics*, ed. by R. F. Engle, and D. McFadden, vol. 4 of *Handbook of Econometrics*, chap. 46, pp. 2739–2841. Elsevier.
STORESLETTEN, KJETIL, CHRIS I. TELMER, AND AMIR YARON (2004): "Consumption and Risk Sharing Over the Life Cycle," *Journal of Monetary Economics*, 51(3), 609–633.
TOPEL, ROBERT H. (1991): "Specific Capital, Mobility and Wages: Wages Rise with Job Seniority," *Journal of Political Economy*, 99, 145–176.
ZELDES, STEPHEN P. (1989): "Optimal Consumption with Stochastic Income: Deviations from Certainty Equivalence," *Quarterly Journal of Economics*, 104(2), 275–298.

2013 edition of State of the States: The AGA Survey of Casino Entertainment[20]

NEW YORK

Current # of Operating Casinos 9 Casino Format Racetrack casinos with publicly-run video lottery terminals with distributions to operators:

- Casino Employees: 5,233
- Casino Employee Wages: $189.63 million (includes tips and benefits)
- Gross Casino Gaming Revenue: $1.802 billion
- Gaming Tax Revenue: $822.67 million
- How Taxes Spent Education
- Legalization Date: 2001
- First Casino Opening Date: 2004
- Revenue Retained by Operator: 34.90%
- Mode of Legalization Legislative action
- Visitor Volume Data not available

Note: New York wage and employment data includes 8 of 9 properties, as one declined to participate in data collection. 2011 data was used for 2 properties because they declined to provide

[20] http://www.americangaming.org/sites/default/files/uploads/docs/aga_sos2013_fnl.pdf

2012 information.

Sources: New York Racing and Wagering Board; New York Lottery; individual properties—Vernon Saratoga Springs, Farmington, Batavia, Hamburg, Nichols, Monticello and Yonkers. The first full year of operations of Resorts World New York in Queens, New York was the driving force behind significant gains in gaming revenue (+43.1%) and tax receipts (+38.6%) when compared to 2011 figures.

MPC Application

Although MPC (Marginal Propensity to Consume) can be significantly higher for lower incomes vs. higher incomes (0.05 to 0.15 difference depending on model used), we are assuming a standard MPC across all counties using only their average salary per worker as the variable.

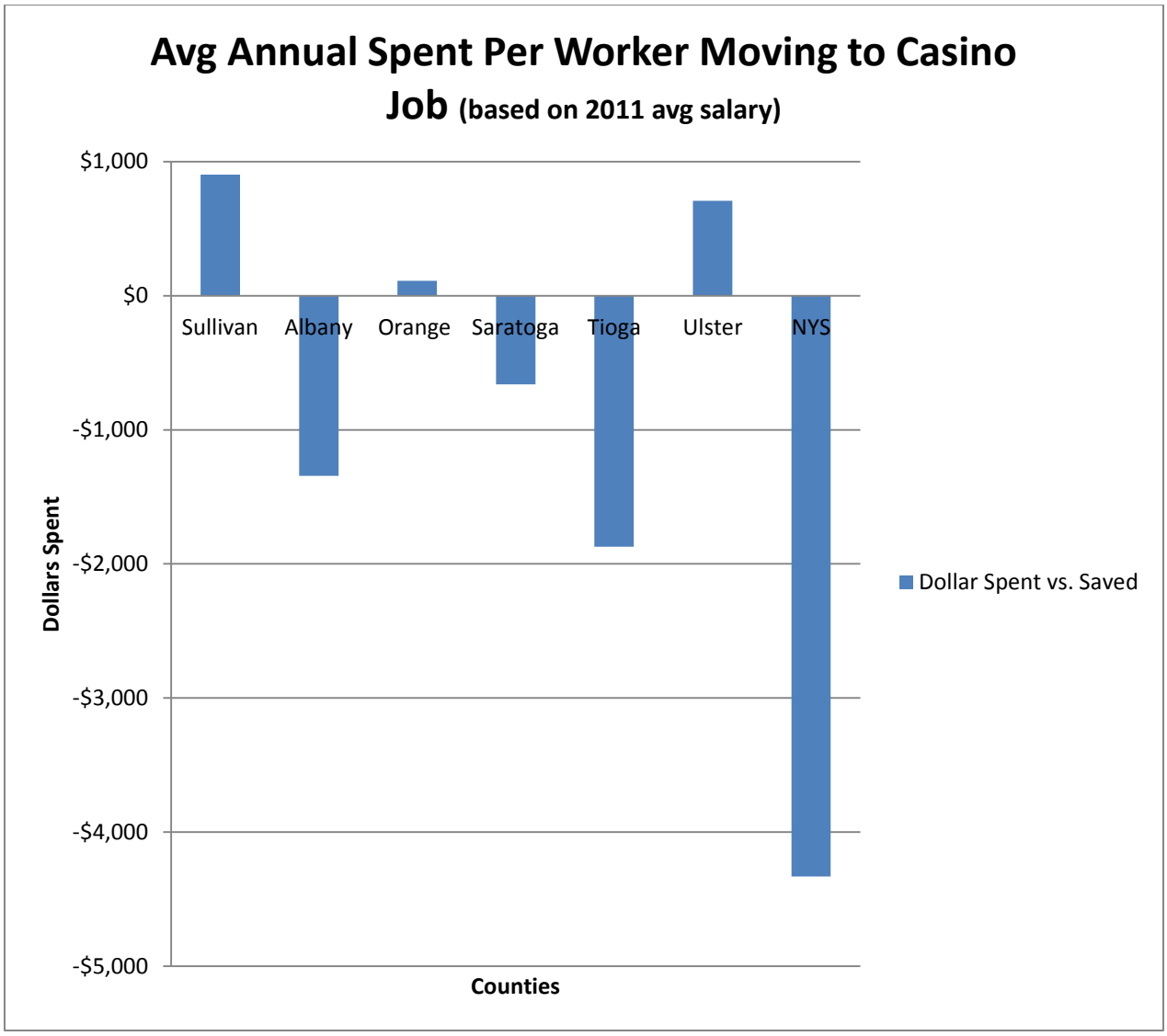
Using the more conservative FBS model, above, employed people of all income levels have an MPC of 0.19 which is what we used in the chart below.

The average Casino Salary of $36,237 used in the table below was derived by dividing the Casino Employee Wages of $189.63 million (includes tips and benefits) by the 5,233 Casino Employees as found in the 2013 AGA Survey of Casino Entertainment NEW YORK, directly above.

The MPC obviously only applies to workers who take the casino job but also might spill over to ancillary jobs created as a result of the casino.

Employed MPC per Average Salary

Employed MPC	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
2011 Avg Salary per	$31,483	$43,310	$35,649	$39,718	$46,086	$32,508	$59,026
Avg Casino Salary	$36,237	$36,237	$36,237	$36,237	$36,237	$36,237	$36,237
Increase	$4,754	-$7,073	$588	-$3,481	-$9,849	$3,729	-$22,789
MPC	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Dollar Spent vs. Saved	$903	-$1,344	$112	-$661	-$1,871	$708	-$4,330



Employed MPC Per Average Salary Dif

Avg Dif	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%		708.5%			27.5%	
Orange	-87.6%		0.0%			-84.2%	
Ulster	-21.6%		534.1%			0.0%	

When the MPC is negative it means the average casino salary is lower than the current salary. For purposes of this particular MPC analysis, it unlikely those workers would take the casino job and thus they are not included.

Sullivan County

Sullivan County has the highest dollar spent vs. saved per average salary ($903) of the 3 counties with an average salary below the casino average salary.

Sullivan County's current dollar spent vs. saved per average salary is:
708.5% higher than Orange County
27.5% higher than Ulster County

Orange County

Orange County has the lowest dollar spent vs. saved per average salary ($112) of the 3 counties with an average salary below the casino average salary.

Orange County's current dollar spent vs. saved per average salary is:
87.6% lower than Sullivan County
84.2% lower than Ulster County

Ulster County

Ulster County has the 2nd highest dollar spent vs. saved per average salary ($708).

Ulster County's current dollar spent vs. saved per average salary is:
21.6% lower than Sullivan County
534.1% higher than Orange County

Marginal Propensity to Consume per Average Salary - Section Conclusion

MPC per Average Salary Rank:
Sullivan $903
Ulster $708
Orange $112

For every employee making the average county wage that takes a job at the casino average wage; Sullivan County will tend to put 708.5% more money ($903) per person into the economy than Orange County ($112) and 27.5% more than Ulster County ($708).

Albany, Saratoga and Tioga have a negative MPC which means the average casino salary is lower than the average current salary. For purposes of this particular MPC analysis, it is unlikely those workers would take the casino job.

Factoring marginal propensity to consume per average salary alone, it is logical to assume the state would benefit the most by placing a casino in the county that has the highest marginal propensity to consume.

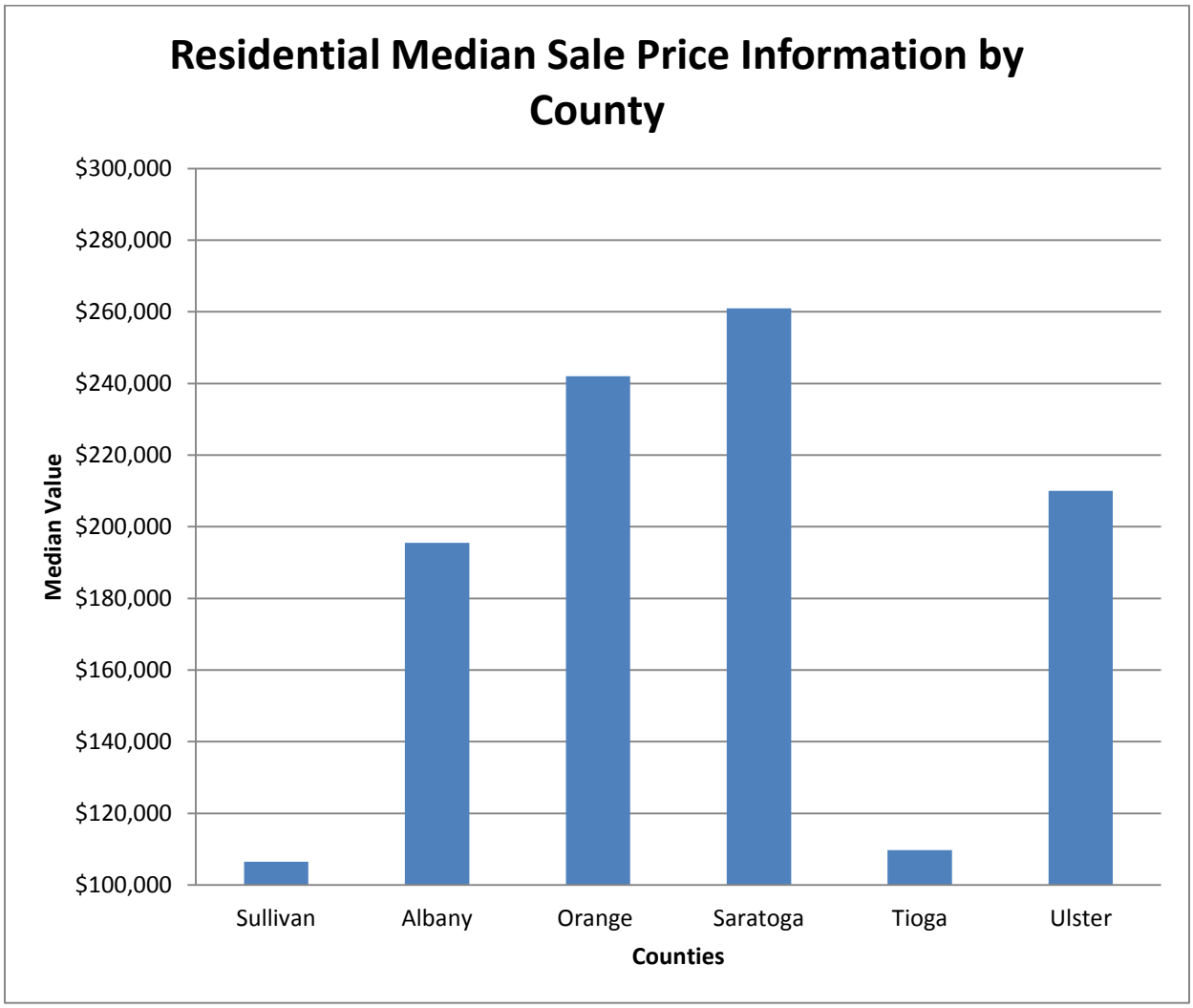
Residential Median Sale Price

The New York State Department of Taxation and Finance - Residential Median Sale Price Information by County[21]

Sales Selection Criteria
In order for a sale to be included in the above statistics it must be an arm's length residential sale, coded non-condominium. Further, the sale price must be greater than 10 dollars and the number of days between the sale date and the contract date must be less than 365, or indeterminate.

2013 Residential Median Sale Price Information by County

Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
$106,500	$195,500	$242,000	$261,000	$109,760	$210,000



[21] http://www.tax.ny.gov/research/property/assess/sales/resmedian.htm

Median Home Price Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
Sullivan	0.0%	-45.5%	-56.0%	-59.2%	-3.0%	-49.3%
Albany	83.6%	0.0%	-19.2%	-25.1%	78.1%	-6.9%
Orange	127.2%	23.8%	0.0%	-7.3%	120.5%	15.2%
Saratoga	145.1%	33.5%	7.9%	0.0%	137.8%	24.3%
Tioga	3.1%	-43.9%	-54.6%	-57.9%	0.0%	-47.7%
Ulster	97.2%	7.4%	-13.2%	-19.5%	91.3%	0.0%
NYS	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%

Sullivan County

Sullivan County has the lowest median home sale price ($106,500) of the 6 counties in the study.

Sullivan County's median home sale price is:
- 45.5% lower than Albany County
- 56.0% lower than Orange County
- 59.2% lower than Saratoga County
- 3.0% lower than Tioga County
- 49.3% lower than Ulster County

Albany County

Of the 6 counties in the study, Albany County has the 3rd lowest median home sale price ($195,500).

Albany County's median home sale price is:
- 83.6% higher than Sullivan County
- 19.2% lower than Orange County
- 25.1% lower than Saratoga County
- 78.1% higher than Tioga County
- 6.9% lower than Ulster County

Orange County

Orange County has the 2nd highest median home sale price ($242,000) next to Saratoga County ($261,000).

Orange County's median home sale price is:
- 127.2% higher than Sullivan County
- 23.8% higher than Albany
- 7.3% lower than Saratoga County
- 120.5% higher than Tioga County
- 15.2% higher than Ulster County

Saratoga County

Saratoga County has the highest median home sale price ($261,000) of the 6 counties in the study.

Saratoga County's median home sale price is:
- 145.1% higher than Sullivan County
- 33.5% higher than Albany
- 7.9% higher than Orange County
- 137.8% higher than Tioga County
- 24.3% higher than Ulster County

Tioga County

Tioga County has the 2nd lowest median home sale price ($109,760) next to Sullivan County ($106,500).

Tioga County's median home sale price is:
- 3.1% higher than Sullivan County
- 43.9% lower than Albany
- 54.6% lower than Orange County
- 57.9% lower than Saratoga County
- 47.7% lower than Ulster County

Ulster County

Ulster County has the 3rd highest median home sale price ($210,000).

Ulster County's median home sale price is:
- 97.2% higher than Sullivan County
- 7.4% higher than Albany
- 13.2% lower than Orange County
- 19.5% lower than Saratoga County
- 91.3% higher than Tioga County

Median Home Sale Price - Section Conclusion

Residential Median Home Sale Price – Rank:
Sullivan $106,500
Tioga $109,760
Albany $195,500
Ulster $210,000
Orange $242,000
Saratoga $261,000

Sullivan County has the lowest median home sale price ($106,500) of the 6 counties in the study. It is also 59.2% lower than Saratoga County's ($261,000) and 56.0% lower than Orange County's ($242,000), the highest of the 6 counties in the study.

Factoring median home sale price alone it is reasonable to assume the state would benefit the most by placing a casino in the county with the lowest median home sale price, as the likelihood of purchasing such homes is higher.

When adding average wages and marginal propensity to consume, the likelihood of homes being bought in Sullivan County greatly improves over a county like Orange. All variables equal, a 30 year mortgage on a $106,500 home in Sullivan County is $572 per month. The average Sullivan County worker taking the average casino job would see a $4,754 rise in income. Conversely a 30 year mortgage on a $242,000 home in Orange County is $1,299 per month and the average Orange County worker taking the average casino job would see a $588 rise in income.

5. Permitting Local Governments to Lower Property Taxes

The objective of this section is to measure and compare statistics that may impact property taxes. These include, but are not limited to, any activity that may lower local taxes or help to spread the current burden thus effectively lowering property tax per assessment value.

Many of the topics in this section are repeated in various forms since they have a duel impact on Jobs (in previous section) and Property Taxes.

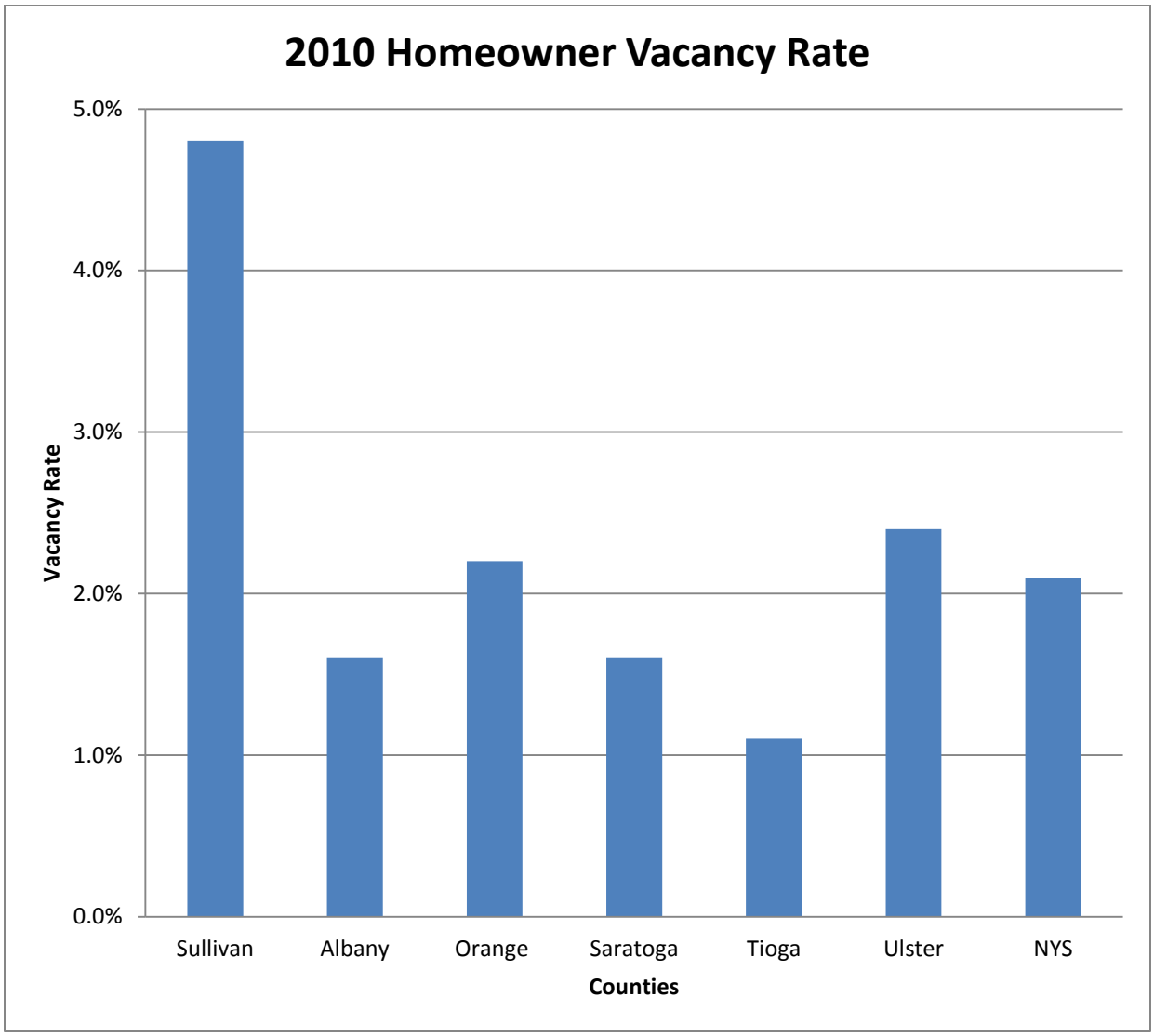
Homeowner Vacancy Rates

The homeowner vacancy rate is the proportion of the homeowner housing inventory which is vacant for sale. It is computed by dividing the number of vacant units for sale only by the sum of owner-occupied units and vacant units that are for sale only, and then multiplying by 100.

U.S. Census 2010 Homeowner Vacancy Rates[22]

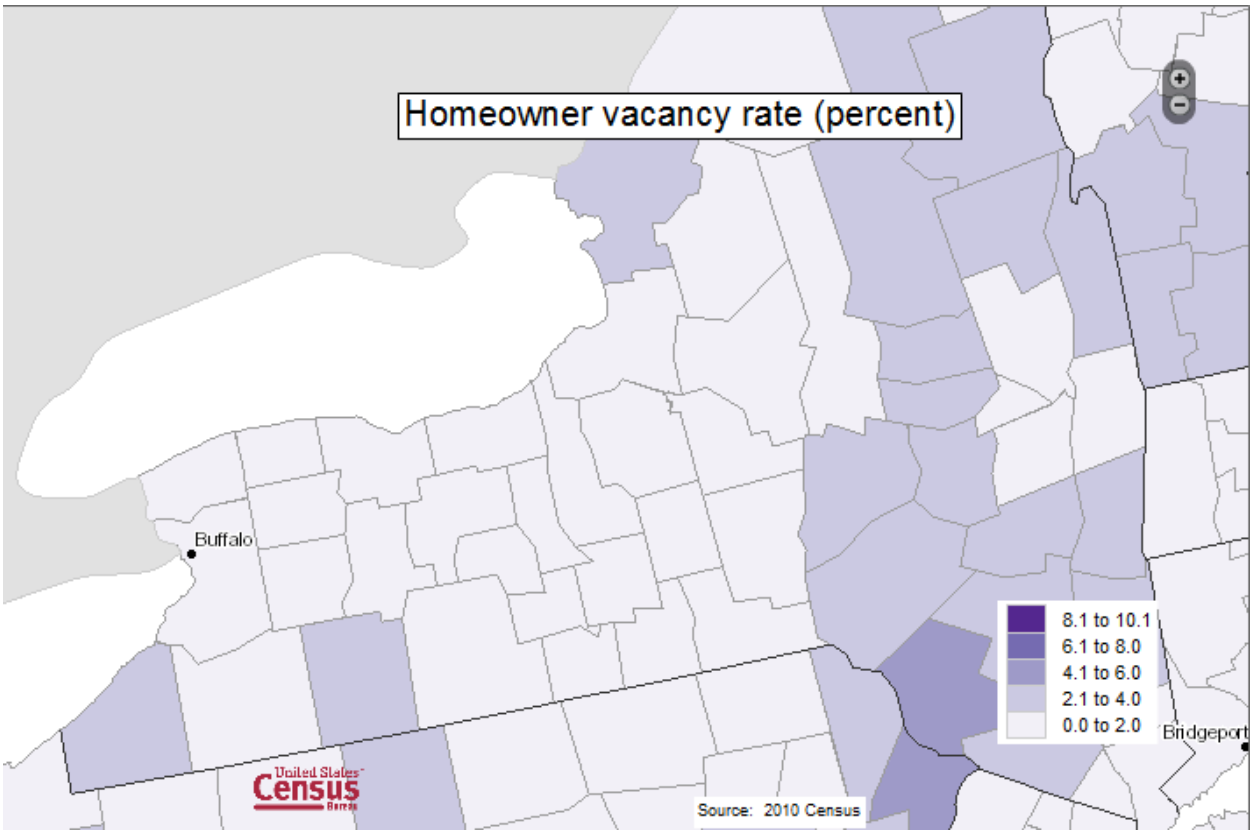
Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
4.8%	1.6%	2.2%	1.6%	1.1%	2.4%	2.1%

[22] http://www.census.gov/compendia/statab/2012/tables/12s0986.pdf



U.S. Census 2010 Homeowner Vacancy Rates Map[23]

[23] http://tigerweb.geo.census.gov/datamapper/map.html



2010 Homeowner Vacancy Rate Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	200.0%	118.2%	200.0%	336.4%	100.0%	128.6%
Albany	-66.7%	0.0%	-27.3%	0.0%	45.5%	-33.3%	-23.8%
Orange	-54.2%	37.5%	0.0%	37.5%	100.0%	-8.3%	4.8%
Saratoga	-66.7%	0.0%	-27.3%	0.0%	45.5%	-33.3%	-23.8%
Tioga	-77.1%	-31.3%	-50.0%	-31.3%	0.0%	-54.2%	-47.6%
Ulster	-50.0%	50.0%	9.1%	50.0%	118.2%	0.0%	14.3%
NYS	-56.3%	31.3%	-4.5%	31.3%	90.9%	-12.5%	0.0%

Sullivan County

Sullivan County has the highest homeowner vacancy rate (4.8%) of the 6 counties in this study. It also has the highest homeowner vacancy rate of the 62 counties in NY.

Sullivan County's current homeowner vacancy rate is:

200% higher than Albany County
118.2% higher than Orange County
200% higher than Saratoga County
336.4% higher than Tioga County
100% higher than Ulster County
128.6% higher than New York State

Albany County

Albany and Saratoga counties, both with a current homeowner vacancy rate of 1.6% tie for the 2nd lowest current homeowner vacancy rate (1.6%), next to Tioga County (1.1%).

Albany County's current homeowner vacancy rate is:

66.7% lower than Sullivan County
27.3% lower than Orange County
equal to Saratoga County
45.5% higher than Tioga County
33.3% lower than Ulster County
23.8% lower than New York State

Orange County

Orange County has the 3rd highest homeowner vacancy rate (2.2%).

Orange County's current homeowner vacancy rate is:

54.2% lower than Sullivan County
37.5% higher than Albany
37.5% higher than Saratoga County
100% higher than Tioga County
8.3% lower than Ulster County
4.8% higher than New York State

Saratoga County

Saratoga County has the 2nd lowest current homeowner vacancy rate (1.6%), tied with Albany County (1.6%), next to Tioga County (1.1%).

Saratoga County's current homeowner vacancy rate is:

66.7% lower than Sullivan County
equal to Albany
27.3% lower than Orange County
45.5% higher than Tioga County
33.3% lower than Ulster County
23.8% lower than New York State

Tioga County

Tioga County has the lowest homeowner vacancy rate (1.1%) of the 6 counties in the study.

Tioga County's current homeowner vacancy rate is:

77.1% lower than Sullivan County
31.3% lower than Albany
50.0% lower than Orange County
31.3% lower than Saratoga County
54.2% lower than Ulster County
47.6% lower than New York State

Ulster County

Ulster County has the 2nd highest homeowner vacancy rate (2.4%) next to Sullivan (4.8%).

Ulster County's current homeowner vacancy rate is:

50% lower than Sullivan County
50% higher than Albany
9.1% higher than Orange County
50% higher than Saratoga County
118.2% higher than Tioga County
14.3% higher than New York State

Homes for Sale[24]

Homeowner vacancy rates paint a picture but don't tell the whole story. Census tracking can't keep up with the real estate sales so a national real estate sales website with county search capability was used. Only homes for sales were used in the search terms including houses, apartments, condos/co-ops, town homes, and manufactured homes (note that the majority of apartments for sale were homes). Lots and land were

[24] http://www.zillow.com/

not included in the search criteria.

Sullivan County – 1584 homes

Albany County – 1621 homes

Orange County – 4438 homes

Saratoga County – 2131 homes

Tioga County – 307 homes

Ulster County – 2456 homes

Homeowner Vacancy Rate - Section Conclusion

Homeowner Vacancy Rates Rank:
Sullivan 4.8%
Ulster 2.4%
Orange 2.2%
Albany 6.6%
Saratoga 6.6%
Tioga 6.1%

Of the 6 counties in this study, Sullivan County has the highest homeowner vacancy rate (4.8%) which is double the vacancy rate of the second highest, Ulster County (2.4%). Sullivan County also has the highest homeowner vacancy rate of the 62 counties in NY.

Tioga County has the lowest homeowner vacancy rate of the 6 counties in the study at 1.1% and also has very few homes for sale.

County Property Tax as a Percent of Income

Median Effective Property Tax Rates by County, 3-Year Average, 2008-2010 Source: Tax Foundation calculations based upon Census data (American Community Survey). Data refers to median real estate taxes and median value on "owner-occupied housing units," as well as the median household income of units that are owner-occupied. Each statistic has a margin of error (confidence interval: 90%) associated with it. This can be significant for low population counties with a small sample size. All counties for which any statistic has a margin of error equal to at least 20% of the estimated value are excluded from the rankings.[25]

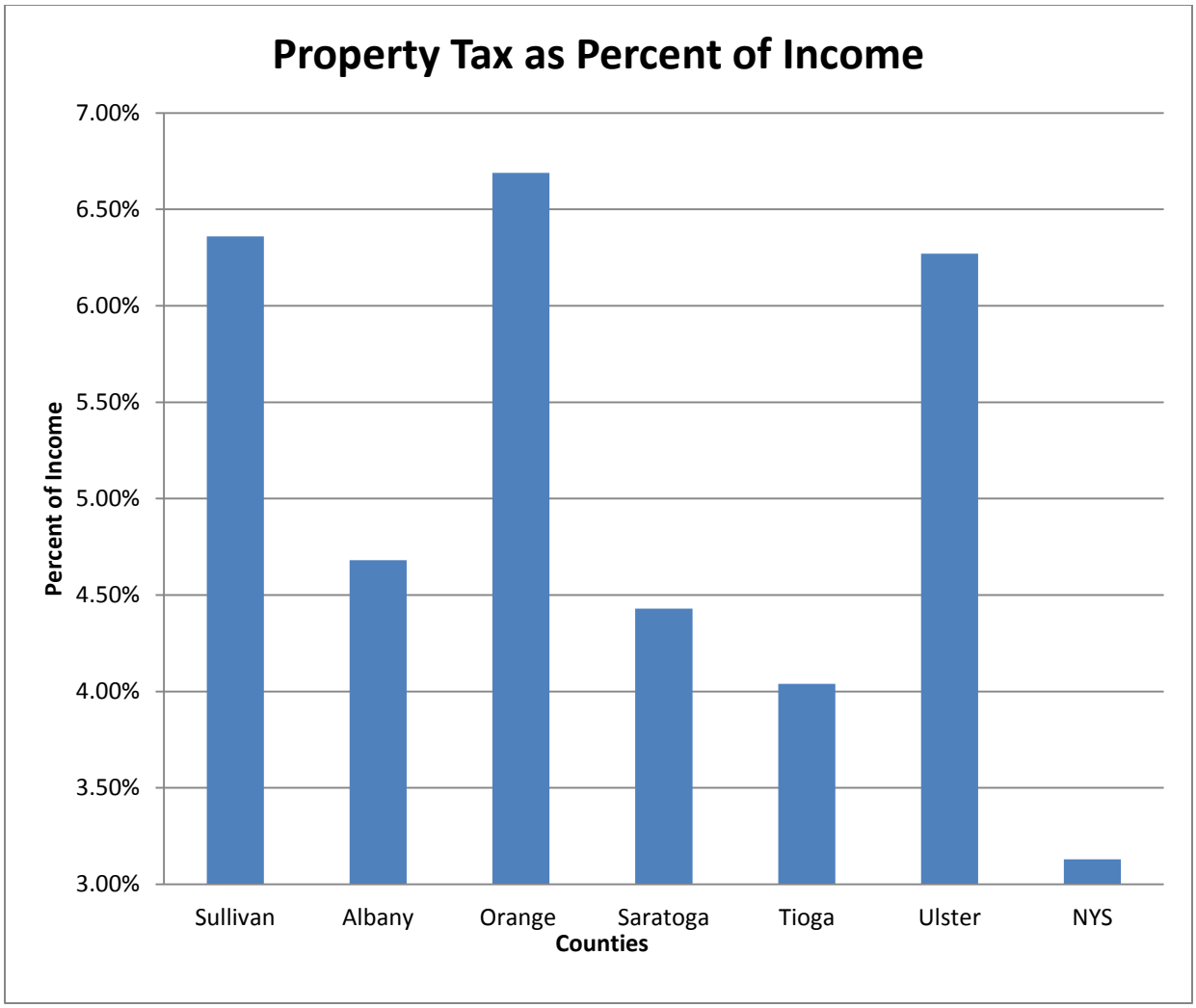
25

http://taxfoundation.org/article_ns/median-effective-property-tax-rates-county-ranked-taxes-percentage-home-value-3-year-average-2008

3-Year Average, 2008-2010 Source: Tax Foundation Geography	Median household income -- Estimate	Tax as Percent of Income Estimate	Rank	Median value -- Estimate	Tax as Percent of Home Value Estimate	Rank
United States	$64,519	3.13%		$187,500	1.08%	
Albany County	$79,370	4.68%	29	$211,600	1.75%	43
Allegany County	$48,537	4.06%	49	$67,200	2.93%	4
Bronx County	$68,565	4.04%	51	$394,800	0.70%	57
Broome County	$56,688	4.39%	34	$104,700	2.37%	25
Cattaraugus County	$49,375	4.34%	38	$78,200	2.74%	9
Cayuga County	$56,692	4.55%	31	$99,800	2.59%	17
Chautauqua County	$50,757	4.37%	36	$80,800	2.75%	8
Chemung County	$55,322	4.22%	40	$90,200	2.59%	18
Chenango County	$50,218	4.19%	41	$90,200	2.33%	27
Clinton County	$62,670	3.83%	55	$121,200	1.98%	36
Columbia County	$64,351	5.80%	12	$232,900	1.60%	49
Cortland County	$57,269	5.05%	19	$101,500	2.85%	6
Delaware County	$50,562	4.05%	50	$128,600	1.59%	50
Dutchess County	$84,620	6.00%	9	$311,600	1.63%	48
Erie County	$62,489	5.13%	18	$121,800	2.63%	15
Essex County	$52,018	4.08%	45	$152,500	1.39%	53
Franklin County	$51,282	3.66%	56	$91,200	2.06%	32
Fulton County	$52,796	4.35%	37	$101,600	2.26%	29
Genesee County	$59,992	4.78%	26	$104,900	2.73%	11
Greene County	$54,438	4.70%	28	$185,200	1.38%	54
Herkimer County	$53,169	4.07%	47	$89,500	2.42%	20
Jefferson County	$58,562	3.61%	57	$128,000	1.65%	47
Kings County	$74,369	4.00%	53	$573,200	0.52%	60
Lewis County	$48,486	3.53%	58	$101,700	1.68%	46
Livingston County	$63,073	4.99%	22	$117,200	2.69%	12
Madison County	$58,956	4.73%	27	$115,900	2.40%	21
Monroe County	$66,847	5.83%	11	$133,500	2.92%	5
Montgomery County	$53,790	5.02%	20	$98,700	2.74%	10
Nassau County	$105,507	8.50%	2	$479,500	1.87%	38
New York County	$132,791	4.57%	30	$841,800	0.72%	56
Niagara County	$57,698	5.23%	17	$102,500	2.95%	3
Oneida County	$60,290	4.23%	39	$106,300	2.40%	23
Onondaga County	$67,193	4.90%	24	$129,600	2.54%	19
Ontario County	$65,830	4.98%	23	$136,700	2.40%	24
Orange County	$87,141	6.69%	6	$306,000	1.91%	37
Orleans County	$56,163	5.47%	14	$90,700	3.39%	1

Oswego County	$55,758	4.38%	35	$91,200	2.68%	13
Otsego County	$52,457	4.06%	48	$126,000	1.69%	45
Putnam County	$98,508	7.74%	5	$408,500	1.87%	39
Queens County	$74,082	4.07%	46	$478,500	0.63%	59
Rensselaer County	$70,618	5.28%	16	$180,800	2.06%	31
Richmond County	$87,662	3.35%	60	$455,700	0.64%	58
Rockland County	$105,342	8.23%	3	$468,000	1.85%	40
Saratoga County	$78,879	4.43%	33	$230,500	1.51%	52
Schenectady County	$66,411	5.99%	10	$165,500	2.40%	22
Schoharie County	$57,906	3.98%	54	$147,000	1.57%	51
Seneca County	$52,362	4.81%	25	$91,800	2.75%	7
St. Lawrence County	$52,214	3.39%	59	$81,700	2.17%	30
Steuben County	$52,992	4.10%	44	$83,800	2.59%	16
Suffolk County	$95,286	7.78%	4	$408,800	1.81%	42
Sullivan County	$59,050	6.36%	7	$188,700	1.99%	34
Tioga County	$59,546	4.04%	52	$101,700	2.36%	26
Tompkins County	$70,448	5.56%	13	$169,200	2.32%	28
Ulster County	$69,981	6.27%	8	$241,500	1.82%	41
Warren County	$63,091	4.11%	42	$189,600	1.37%	55
Washington County	$57,844	5.00%	21	$145,600	1.99%	35
Wayne County	$60,668	5.33%	15	$109,600	2.95%	2
Westchester County	$110,211	8.55%	1	$546,900	1.72%	44
Wyoming County	$57,847	4.53%	32	$98,100	2.67%	14
Yates County	$57,500	4.10%	43	$115,000	2.05%	33

Property Tax as Percent of Income	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**NYS**
	6.36%	4.68%	6.69%	4.43%	4.04%	6.27%	3.13%



Property Tax as Percent of Income Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	35.9%	-4.9%	43.6%	57.4%	1.4%	103.2%
Albany	-26.4%	0.0%	-30.0%	5.6%	15.8%	-25.4%	49.5%
Orange	5.2%	42.9%	0.0%	51.0%	65.6%	6.7%	113.7%
Saratoga	-30.3%	-5.3%	-33.8%	0.0%	9.7%	-29.3%	41.5%
Tioga	-36.5%	-13.7%	-39.6%	-8.8%	0.0%	-35.6%	29.1%
Ulster	-1.4%	34.0%	-6.3%	41.5%	55.2%	0.0%	100.3%
NYS	-50.8%	-33.1%	-53.2%	-29.3%	-22.5%	-50.1%	0.0%

Sullivan County

Sullivan County has the 2nd highest property tax as a percentage of income (6.36%) next to Orange County (6.69%). It also has the 7th highest property tax as a percentage of income of the 60 New York counties included in the study.

Sullivan County's current property tax as a percentage of income is:

35.9% higher than Albany County
4.9% lower than Orange County
43.6% higher than Saratoga County
57.4% higher than Tioga County
1.4% higher than Ulster County
103.2% higher than New York State

Albany County

Albany County has the 3rd lowest current property tax as a percentage of income (4.68%) of the 6 counties in the study.

Albany County's current property tax as a percentage of income is:

26.4% lower than Sullivan County
30.0% lower than Orange County
5.6% higher than Saratoga County
15.8% higher than Tioga County
25.4% lower than Ulster County
49.5% higher than New York State

Orange County

Orange County has the highest property tax as a percentage of income (6.69%) of the 6 counties in the study. It is also the 6th highest property tax as a percentage of income of the 60 New York Counties included in the study.

Orange County's current property tax as a percentage of income is:

5.2% higher than Sullivan County
42.9% higher than Albany
51.0% higher than Saratoga County
65.6% higher than Tioga County
6.7% higher than Ulster County
113.7% higher than New York State

Saratoga County

Saratoga County has the 2nd lowest current property tax as a percentage of income (4.43%) next to Tioga County (4.04%).

Saratoga County's current property tax as a percentage of income is:

30.3% lower than Sullivan County
5.3% lower than Albany
33.8% lower than Orange County
9.7% higher than Tioga County
29.3% lower than Ulster County
41.5% higher than New York State

Tioga County

Tioga County has the lowest property tax as a percentage of income (4.04%) of the 6 counties in the study.

Tioga County's current property tax as a percentage of income is:

36.5% lower than Sullivan County
13.7% lower than Albany
39.6% lower than Orange County
8.8% lower than Saratoga County
35.6% lower than Ulster County
29.1% higher than New York State

Ulster County

Ulster County has the 3rd highest property tax as a percentage of income (6.27%).

Ulster County's current property tax as a percentage of income is:

1.4% lower than Sullivan County
34.0% higher than Albany
6.3% lower than Orange County
41.5% higher than Saratoga County
55.2% higher than Tioga County
100.3% higher than New York State

Property tax as a percentage of income - Section Conclusion

Property Tax as a Percentage of Income Rank:
Orange 6.69%
Sullivan 6.36%
Ulster 6.27%
Albany 4.68%
Saratoga 4.43%
Tioga 4.04%

Of the 6 counties, Orange County has the highest property tax as a percentage of income (6.69%) and has the 6th highest property tax as a percentage of income of the 60 New York counties in the tax study.

Of the 6 counties, Sullivan County has the 2nd highest property tax as a percentage of income (6.36%) and has the 7th highest property tax as a percentage of income of the 60 New York counties in the tax study.

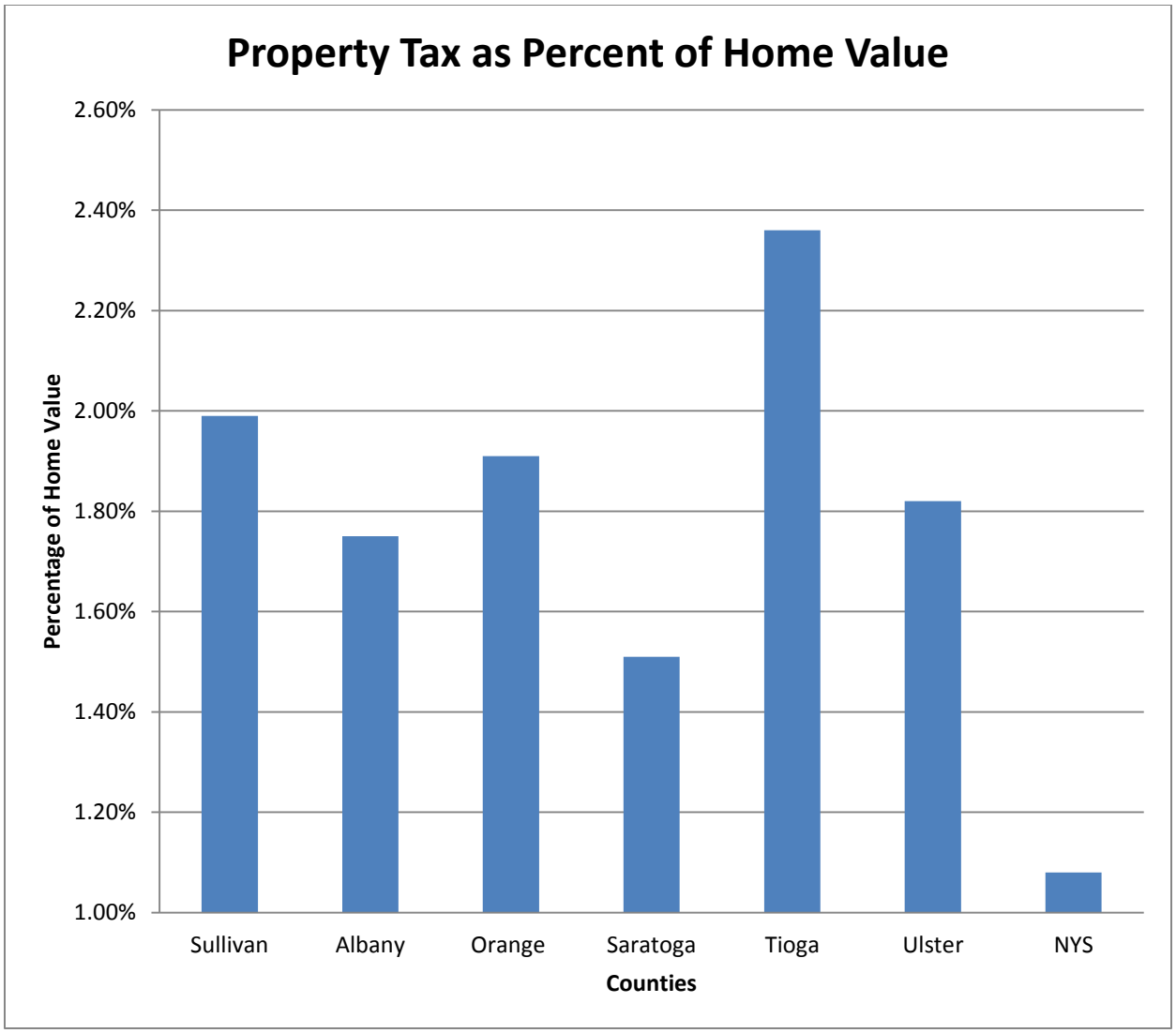
Tioga County has the lowest property tax (4.04%) as a percentage of income of the 6 counties in the study.

Factoring property tax as a percentage of income alone, it is logical to assume the state would benefit the most by placing a casino in the county with the highest property tax as a percentage of income as the new tax generated by the casino could lower the effective tax rate.

When adding the number of taxable properties to the mix (using employees, wages, and census as a guide) it is logical to assume the impact of casino taxes would be proportionately larger in a county like Sullivan or Tioga that have less taxable properties.

County Property Tax as a Percent of Home Value

Property Tax as Percent of Home Value	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
	1.99%	1.75%	1.91%	1.51%	2.36%	1.82%	1.08%



Property Tax as Percent of Home Value Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	13.7%	4.2%	31.8%	-15.7%	9.3%	84.3%
Albany	-12.1%	0.0%	-8.4%	15.9%	-25.8%	-3.8%	62.0%
Orange	-4.0%	9.1%	0.0%	26.5%	-19.1%	4.9%	76.9%
Saratoga	-24.1%	-13.7%	-20.9%	0.0%	-36.0%	-17.0%	39.8%
Tioga	18.6%	34.9%	23.6%	56.3%	0.0%	29.7%	118.5%
Ulster	-8.5%	4.0%	-4.7%	20.5%	-22.9%	0.0%	68.5%
NYS	-45.7%	-38.3%	-43.5%	-28.5%	-54.2%	-40.7%	0.0%

Sullivan County

Sullivan County has the 2nd highest property tax as a percentage of home value (1.99%) next to Tioga County (2.36%).

Sullivan County's current property tax as a percentage of home value is:

13.7% higher than Albany County
4.2% higher than Orange County
31.8% higher than Saratoga County
15.7% lower than Tioga County
9.3% higher than Ulster County
84.3% higher than New York State

Albany County

Albany County has the 2nd lowest current property tax as a percentage of home value (1.75%) next to Saratoga County (1.51%).

Albany County's current property tax as a percentage of home value is:

12.1% lower than Sullivan County
8.4% lower than Orange County
15.9% higher than Saratoga County
25.8% lower than Tioga County
3.8% lower than Ulster County
62.0% higher than New York State

Orange County

Orange County has the 3rd highest property tax as a percentage of home value (1.91%) of the 6 counties in the study.

Orange County's current property tax as a percentage of home value is:

4.0% lower than Sullivan County
9.1% higher than Albany
26.5% higher than Saratoga County
19.1% lower than Tioga County
4.9% higher than Ulster County
76.9% higher than New York State

Saratoga County

Saratoga County has the lowest current property tax as a percentage of home value (1.51%) next to Albany County (1.75%).

Saratoga County's current property tax as a percentage of home value is:

24.1% lower than Sullivan County
13.7% lower than Albany
20.9% lower than Orange County
36.0% lower than Tioga County
17.0% lower than Ulster County
39.8% higher than New York State

Tioga County

Tioga County has the highest property tax as a percentage of home value (2.36%) of the 6 counties in the study.

Tioga County's current property tax as a percentage of home value is:

18.6% higher than Sullivan County
34.9% higher than Albany
23.6% higher than Orange County
56.3% higher than Saratoga County
29.7% higher than Ulster County
118.5% higher than New York State

Ulster County

Ulster County has the 3rd lowest property tax as a percentage of home value (1.82%).

Ulster County's current property tax as a percentage of home value is:

8.5% lower than Sullivan County
4.0% higher than Albany
4.7% lower than Orange County
20.5% higher than Saratoga County
22.9% lower than Tioga County
68.5% higher than New York State

Property Tax as a Percentage of Home Value - Section Conclusion

Property Tax as a Percentage of Home Value Rank:
Tioga 2.36%
Sullivan 1.99%
Orange 1.91%
Ulster 1.82%
Albany 1.75%
Saratoga 1.51%

Of the 6 counties, Tioga County has the highest property tax as a percentage of home value (2.36%) and is 113.5% higher than New York State's.

Sullivan County has the 2nd highest property tax as a percentage of home value (1.99%) and is 84.3% higher than New York State.

Saratoga County has the lowest current property tax as a percentage of home value (1.51%) next to Albany County (1.75%).

Factoring property tax as a percentage of home value alone, it is logical to assume the State would benefit the most by placing a casino in the county with the highest property tax as a percentage of home value. Increased wages might result in property values rising and increasing the tax base without increasing the effective tax rate. This would have the same net effect as lowering property taxes on current home prices.

Adding the taxes generated by the casino will obviously add to the tax base and potentially lower the effective county tax rate as well. As stated in the Property Tax as a Percentage of Income Section Conclusion, that effect could be proportionately larger in a county with a smaller tax base like Sullivan or Tioga.

Income & Marginal Propensity to Consume

The areas of Average Salary per Worker and Marginal Propensity to Consume mentioned in Section 4: Job Growth, will also conspire to potentially lower property taxes.

As concluded in the Section 4: Job Growth, people in counties with the lowest average salary per worker will spend more than the next county if given an equal increase in income.

According to the Marginal Propensity to Consume per Average Salary - Section Conclusion, Sullivan County will tend to put 708.5% more money ($903) per person into the economy than Orange County ($112) and 27.5% more than Ulster County ($708).

Income & Marginal Propensity to Consume - Section Conclusion

A portion of the rise in income spent by employees would obviously be applied to real property through upsizing, additions/improvements, and new construction. Any increase in tax base resulting from additions/improvements and new construction should help to lower the overall tax rate to a county. In addition, it should improve the flow of money to New York real estate agents, attorneys, title companies, contractors, etc.

Median Home Sales Price

A low median home sales price mentioned in Section 4: Job Growth can also assist in potentially lowering property taxes.

According to the Median Home Sales Price – Section Conclusion, Sullivan County has the lowest median home sale price ($106,500) of the 6 counties in the study. This is 59.2% lower than Saratoga County ($261,000) and 56.0% lower than Orange County ($242,000), the county with the highest median home sale price of the 6 counties in the study.

Median Home Sales Price - Section Conclusion

Counties like Sullivan and Tioga containing homes with a median sales price of less than half that of the highest median sales price counties will have a higher likelihood of homes being purchased; especially in Sullivan where the rise in average income for an average casino worker is larger. Any increase in tax base resulting from new assessments and/or additions/improvements should help to lower the overall tax rate for that county.

6. Increasing Aid to Schools

The objective of this section is to measure and compare statistics that may impact schools. These include, but are not limited to any activity that may increase the local school tax base or justify State/Federal aid to one county's schools vs. another.

Many of the topics in this section are repeated in various forms since they have a duel impact on Jobs, Property Tax (in previous sections) and Aid to Schools.

Income & Marginal Propensity to Consume

The areas of Per Capita Income, Average Salary per Worker, and Marginal Propensity to Consume mentioned in Section 4: Job Growth, will also conspire to potentially increase the school tax base via investment in real estate as described in the Permitting Local Governments to Lower Property Taxes section.

As concluded in Section 4: Job Growth, people in counties with the lowest Average Salary per Worker will spend more than the next county if given an equal increase in income.

According to the Marginal Propensity to Consume per Average Salary - Section Conclusion; Sullivan County will tend to put 708.5% more money ($903) per person into the economy than Orange County ($112) and 27.5% more than Ulster County ($708).

Income & Marginal Propensity to Consume - Section Conclusion

A portion of the rise in income (if any) to the average worker taking the average casino job would obviously be applied to real property through upsizing, additions/improvements, and new construction. Any increase in school tax base resulting from additions/improvements and new construction should aid local schools and potentially lower the overall school tax rate.

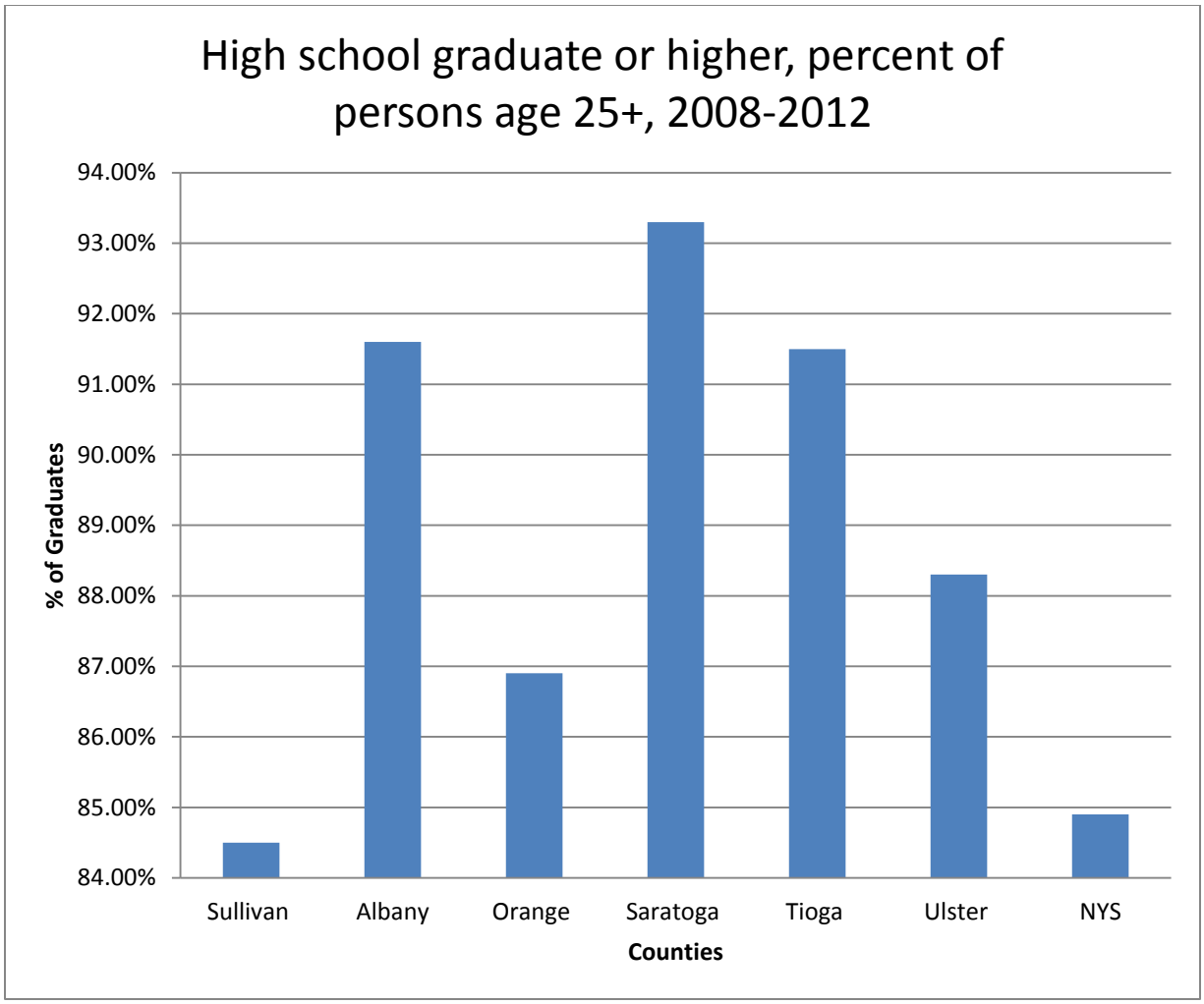
Education Achievement Levels

According to the 2012 United States Census[26]

High school graduate or higher, percent of persons age 25+, 2008-2012

Sullivan	84.50%
Albany	91.60%
Orange	86.90%
Saratoga	93.30%
Tioga	91.50%
Ulster	88.30%

[26] http://quickfacts.census.gov/qfd/states/36/36071.html



High School Graduation Rate Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-7.8%	-2.8%	-9.4%	-7.7%	-4.3%	-0.5%
Albany	8.4%	0.0%	5.4%	-1.8%	0.1%	3.7%	7.9%
Orange	2.8%	-5.1%	0.0%	-6.9%	-5.0%	-1.6%	2.4%
Saratoga	10.4%	1.9%	7.4%	0.0%	2.0%	5.7%	9.9%
Tioga	8.3%	-0.1%	5.3%	-1.9%	0.0%	3.6%	7.8%
Ulster	4.5%	-3.6%	1.6%	-5.4%	-3.5%	0.0%	4.0%
NYS	0.5%	-7.3%	-2.3%	-9.0%	-7.2%	-3.9%	0.0%

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest high school graduation rate (84.5%) next to Orange (86.9%).

Sullivan County's high school graduation rate is:

- 7.8% lower than Albany County
- 2.8% lower than Orange County
- 9.4% lower than Saratoga County
- 7.7% lower than Tioga County
- 4.3% lower than Ulster County
- 0.5% lower than New York State

Albany County

Albany County has the 2nd highest high school graduation rate (91.6%) next to Saratoga County (93.30%).

Albany County's high school graduation rate is:

- 8.4% higher than Sullivan County
- 5.4% higher than Orange County
- 1.8% lower than Saratoga County
- 0.1% higher than Tioga County
- 3.7% higher than Ulster County
- 7.9% higher than New York State

Orange County

Orange County has the 2nd lowest high school graduation rate (86.9%) next to Sullivan County (84.5%).

Orange County's high school graduation rate is:

- 2.8% higher than Sullivan County
- 5.1% lower than Albany
- 6.9% lower than Saratoga County
- 5.0% lower than Tioga County
- 1.6% lower than Ulster County
- 2.4% higher than New York State

Saratoga County

Saratoga County has the highest high school graduation rate (93.3%) of the 6 counties in the study.

Saratoga County's high school graduation rate is:

10.4% higher than Sullivan County
1.9% higher than Albany
7.4% higher than Orange County
2.0% higher than Tioga County
5.7% higher than Ulster County
9.9% higher than New York State

Tioga County

Tioga County has the 3rd highest high school graduation rate (91.5%).

Tioga County's high school graduation rate is:

8.3% higher than Sullivan County
0.1% lower than Albany
5.3% higher than Orange County
1.9% lower than Saratoga County
3.6% higher than Ulster County
7.8% higher than New York State

Ulster County

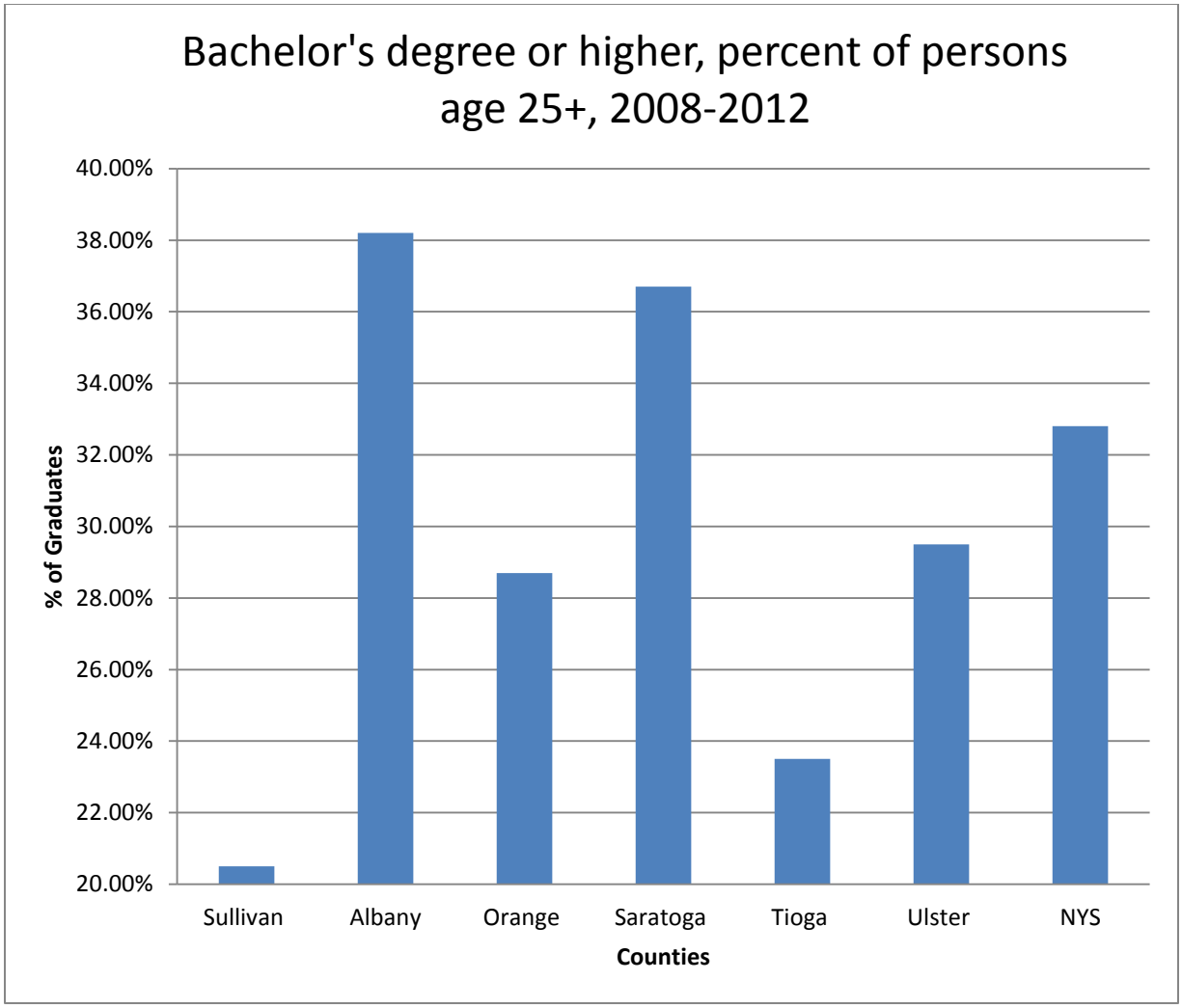
Ulster County has the 3rd lowest high school graduation rate (88.3%) of the 6 counties in the study.

Ulster County's high school graduation rate is:

4.5% higher than Sullivan County
3.6% lower than Albany
1.6% higher than Orange County
5.4% lower than Saratoga County
3.5% lower than Tioga County
4.0% higher than New York State

Bachelor's degree or higher, percent of persons age 25+, 2008-2012

Sullivan	20.50%
Albany	38.20%
Orange	28.70%
Saratoga	36.70%
Tioga	23.50%
Ulster	29.50%



Bachelor's Degree Rate Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-46.3%	-28.6%	-44.1%	-12.8%	-30.5%	-37.5%
Albany	86.3%	0.0%	33.1%	4.1%	62.6%	29.5%	16.5%
Orange	40.0%	-24.9%	0.0%	-21.8%	22.1%	-2.7%	-12.5%
Saratoga	79.0%	-3.9%	27.9%	0.0%	56.2%	24.4%	11.9%
Tioga	14.6%	-38.5%	-18.1%	-36.0%	0.0%	-20.3%	-28.4%
Ulster	43.9%	-22.8%	2.8%	-19.6%	25.5%	0.0%	-10.1%
NYS	60.0%	-14.1%	14.3%	-10.6%	39.6%	11.2%	0.0%

American Psychological Association

Poverty and high school dropouts - The impact of family and community poverty on high school dropouts.
By Russell W. Rumberger, PhD

The impact of family and community poverty on high school dropouts. The United States is facing a dropout crisis, with an estimated 1.1 million members of the 2012 high school graduating class not earning diplomas (Education Week, 2012). Dropouts face extremely bleak economic and social prospects. Compared to high school graduates, they are less likely find a job and earn a living wage, and more likely to be poor and to suffer from a variety of adverse health outcomes (Rumberger, 2011). Moreover, they are more likely to rely on public assistance, engage in crime and generate other social costs borne by taxpayers (Belfield & Levin, 2007).

Poverty and dropouts are inextricably connected in the three primary settings affecting healthy child and adolescent development: families, schools and communities.

In 2009, poor (bottom 20 percent of all family incomes) students were five times more likely to drop out of high school than high-income (top 20 percent of all family incomes) students (Chapman, Laird, Ifill, & KewalRamani, 2011, Table 1). Child poverty is rampant in the U.S., with more than 20 percent of school-age children living in poor families (Snyder & Dillow, 2012, Table 27). And poverty rates for Black and Hispanic families are three times the rates for White families.

Family Poverty

Family poverty is associated with a number of adverse conditions — high mobility and homelessness; hunger and food insecurity; parents who are in jail or absent; domestic violence; drug abuse and other problems — known as "toxic stressors" because they are severe, sustained and not buffered by supportive relationships (Shonkoff & Garner, 2012). Drawing on a diverse fields of medical, biological and social science, Shonkoff and Garner present an ecobiodevelopmental framework to show how toxic stress in early childhood leads to lasting impacts on learning (linguistic, cognitive and social-emotional skills), behavior and health. These impacts are likely manifested in some of the precursors to dropping out, including low achievement, chronic absenteeism and misbehavior, as well as a host of strategies, attitudes and

behaviors — sometimes referred to as "noncogntive" skills — linked to school success (Farrington et al., 2012)

While family poverty is clearly related to dropping out, poverty associated with schools and communities also contributes to the dropout crisis. It is also well documented that schools in the United States are highly segregated by income, social class and race/ethnicity. In 2009-2010, 9 percent of all secondary students attended high-poverty schools (where 75 percent or more of the students are eligible for free or reduced price lunch), but 21 percent of Blacks and Hispanics attended high-poverty schools, compared to 2 percent of Whites and 7 percent of Asians (Aud et al., 2012, Figure 13-2). More than 40 years ago, famed sociologist James Coleman demonstrated that a students' achievement is more highly related to the characteristics of other students in the school than any other school characteristic (Coleman et al., 1966). Subsequent research has confirmed this finding and even found that the racial/ethnic and social class composition of schools was more important than a student's own race, ethnicity and social class in explaining educational outcomes (Borman & Dowling, 2010).

Community Poverty

Community poverty also matters. Some neighborhoods, particularly those with high concentrations of African-Americans, are communities of concentrated disadvantage with extremely high levels of joblessness, family instability, poor health, substance abuse, poverty, welfare dependency and crime (Sampson, Morenoff, & Gannon-Rowley, 2002). Disadvantaged communities influence child and adolescent development through the lack of resources (playgrounds and parks, after-school programs) or negative peer influences (Leventhal & Brooks-Gunn, 2000). For instance, students living in poor communities are more likely to have dropouts as friends, which increases the likelihood of dropping out of school.

The adverse effects of poverty on school dropout can be mitigated through two primary strategies. One is to improve the academic achievement, attitudes and behaviors of poor and other students at risk for dropping out through targeted intervention programs. The U.S Department of Education's What Works Clearinghouse maintains a list of proven programs; it also issued a Dropout Prevention Practice Guide in 2009 with a set of research-based practices (Dynarski et al., 2008). This approach is limited to the extent that students continue to be exposed to the adverse settings of poor families, poor schools and poor communities.

The second strategy is to improve the settings themselves. Effectively, that would mean reducing the poverty level of families, schools and communities and the adverse conditions within them. This would require considerable, political will, and public support to reduce the huge disparities in family income, access to health care, school funding and student composition, and community resources.

A 2005 United Nations report found that the U.S. had the highest rate of child poverty among all 24 Organization for Economic and Cooperative Development (OECD) countries exceeded only by Mexico (UNICEF, 2005). The report further found that variation in government policy — particularly the extent to which the government provides social transfer programs for low-income families — explains most of the variation in poverty rates among countries. A recent follow-up

report examined five dimensions of child well-being — material well-being, health and safety, education, behaviors and risks and housing and environment — in 29 developed countries, and the U.S. ranked 26th (UNICEF, 2013). Maybe it is not a coincidence that the U.S. also ranks 22nd in the world in high school graduation rates (OECD, 2112, Chart A2.1). If the U.S. ever hopes to achieve President Obama's stated goal of becoming first in the world in college completion rates, then it is imperative that we greatly increase rates of high school graduation and child well-being.[27]

Sullivan County

Of the 6 counties in this study, Sullivan County has the lowest bachelor degree attainment rate (20.5%) next to Tioga (23.5%).

Sullivan County's bachelor degree attainment rate is:

46.3% lower than Albany County
28.6% lower than Orange County
44.1% lower than Saratoga County
12.8% lower than Tioga County
30.5% lower than Ulster County
37.5% lower than New York State

Albany County

Albany County has the highest bachelor's degree attainment rate (38.2%) of the 6 counties in the study.

Albany County's bachelor's degree attainment rate is:

86.3% higher than Sullivan County
33.1% higher than Orange County
4.1% higher than Saratoga County
62.6% higher than Tioga County
29.5% higher than Ulster County
16.5% higher than New York State

[27] http://www.apa.org/pi/ses/resources/indicator/2013/05/poverty-dropouts.aspx

Orange County

Orange County has the 3rd lowest bachelor's degree attainment rate (28.7%).

Orange County's bachelor's degree attainment rate is:
- 40.0% higher than Sullivan County
- 24.9% lower than Albany
- 21.8% lower than Saratoga County
- 22.1% higher than Tioga County
- 2.7% lower than Ulster County
- 12.5% lower than New York State

Saratoga County

Saratoga County has the 2nd highest bachelor's degree attainment rate (36.7%) next to Albany County (38.2%).

Saratoga County's bachelor's degree attainment rate is:
- 79.0% higher than Sullivan County
- 3.9% lower than Albany
- 27.9% higher than Orange County
- 56.2% higher than Tioga County
- 24.4% higher than Ulster County
- 11.9% higher than New York State

Tioga County

Tioga County has the 2nd lowest bachelor's degree attainment rate (23.5%).

Tioga County's bachelor's degree attainment rate is:
- 14.6% higher than Sullivan County
- 38.5% lower than Albany
- 18.1% lower than Orange County
- 36.0% lower than Saratoga County
- 20.3% lower than Ulster County
- 28.4% lower than New York State

Ulster County

Ulster County has the 3rd highest bachelor's degree attainment rate (29.5%) of the 6 counties in the study.

Ulster County's bachelor degree attainment rate is:

43.9% higher than Sullivan County
22.8% lower than Albany
2.8% higher than Orange County
19.6% lower than Saratoga County
25.5% higher than Tioga County
10.1% lower than New York State

Education Achievement Levels - Section Conclusion

High School Graduation Rank:
Sullivan 84.5%
Orange 86.9%
Ulster 88.3%
Tioga 91.5%
Albany 91.6%
Saratoga 93.3%

Of the 6 counties in this study, Sullivan County has the lowest high school graduation rate (84.5%), which is 9.3% lower than Saratoga County (93.3%), the highest. Sullivan also has the lowest bachelor's degree attainment rate (20.5%), which is 46.3% lower than Albany County (38.2%), the highest.

Of the 6 counties in this study, Sullivan County is the only one with a high school graduation rate (84.5%) that is lower than the state's (84.9%). Sullivan County is also the furthest from the state in bachelor's degree attainment, and is 35.7% lower in bachelor's degree attainment than the state overall.

A county like Sullivan with the lowest average wage, highest unemployment rate, and highest discouraged worker rate, should see (and perceive) the biggest increase by taking the average casino job. A portion of that increase may go directly towards education or indirectly via increased property tax base.

Not only could schools be aided by tax and direct spend but according to many studies, including the APA study above, higher income families (and communities) have higher graduation rates. Higher graduation rates are linked to higher salaries, which are linked to larger homes that increases the school tax base giving more aid to schools. The perpetual circle improves itself.

7. Indirect or Ancillary Influencers

The objective of this section is to measure and compare statistics that might have an indirect or ancillary impact on jobs, property taxes, aid to schools, and/or other criteria.

Proposition 1 Yes Votes

NYS Board of Elections Proposal Election Returns Nov. 5, 2013[28]
The proposed amendment to section 9 of article 1 of the Constitution would allow the Legislature to authorize up to seven casinos in New York State for the legislated purposes of promoting job growth, increasing aid to schools, and permitting local governments to lower property taxes through revenues generated. Shall the amendment be approved?

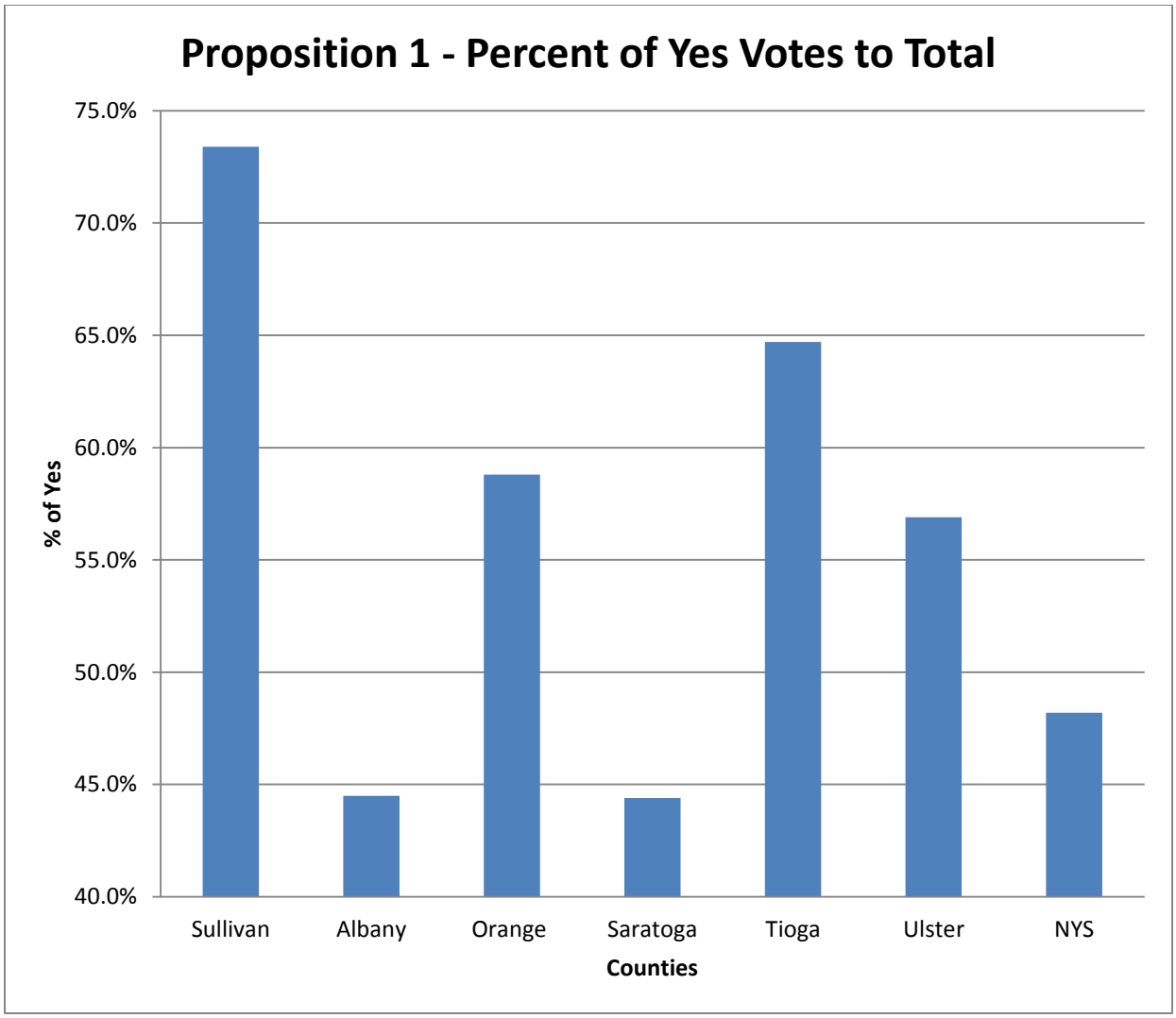
County	Yes	No	Blank	Void	BVS Subtotal	Total	% of Yes	Rank	% of Blank	Rank
Albany	31,481	34,946	4,250	58	4,308	70,735	44.5%	43	6.0%	18
Allegany	3,455	4,365	922	0	922	8,742	39.5%	57	10.5%	46
Bronx	67,508	24,870	50,847	0	50,847	143,225	47.1%	31	35.5%	62
Broome	19,513	10,329	840	0	840	30,682	63.6%	4	2.7%	1
Cattaraugus	4,837	6,916	930	0	930	12,683	38.1%	61	7.3%	26
Cayuga	7,651	6,971	996	3	999	15,621	49.0%	26	6.4%	20
Chautauqua	11,460	13,925	1,542	2	1,544	26,929	42.6%	52	5.7%	13
Chemung	12,160	5,533	1,118	0	1,118	18,811	64.6%	3	5.9%	16
Chenango	4,556	3,875	668	1	669	9,100	50.1%	22	7.3%	27
Clinton	10,701	4,698	1,970	1	1,971	17,370	61.6%	5	11.3%	48
Columbia	9,028	8,135	1,250	6	1,256	18,419	49.0%	25	6.8%	23
Cortland	4,809	4,406	727	0	727	9,942	48.4%	29	7.3%	25
Delaware	5,683	4,268	878	1	879	10,830	52.5%	16	8.1%	33
Dutchess	29,045	19,763	4,264	0	4,264	53,072	54.7%	12	8.0%	31
Erie	80,521	88,046	15,487	0	15,487	184,054	43.7%	48	8.4%	35
Essex	4,874	3,512	1,514	0	1,514	9,900	49.2%	24	15.3%	56
Franklin	4,345	3,421	1,114	7	1,121	8,887	48.9%	27	12.5%	50
Fulton	5,709	4,504	844	10	854	11,067	51.6%	20	7.6%	30
Genesee	3,746	5,200	560	3	563	9,509	39.4%	58	5.9%	14
Greene	6,287	4,946	641	0	641	11,874	52.9%	13	5.4%	10
Hamilton	1,054	1,185	144	56	200	2,439	43.2%	49	5.9%	15
Herkimer	5,507	4,683	956	8	964	11,154	49.4%	23	8.6%	37
Jefferson	7,584	6,469	1,468	0	1,468	15,521	48.9%	28	9.5%	42
Kings	134,541	101,949	109,108	0	109,108	345,598	38.9%	59	31.6%	61
Lewis	2,648	3,055	843	0	843	6,546	40.5%	55	12.9%	51
Livingston	8,286	7,920	2,572	0	2,572	18,778	44.1%	46	13.7%	54
Madison	6,016	7,266	719	0	719	14,001	43.0%	50	5.1%	7

[28] http://www.elections.ny.gov/NYSBOE/elections/2013/proposals/2013GeneralElection-Prop1.pdf

Monroe	62,815	63,174	12,381	14	12,395	138,384	45.4%	38	8.9%	40
Montgomery	5,592	4,402	805	2	807	10,801	51.8%	19	7.5%	29
Nassau	171,292	84,360	35,038	149	35,187	290,839	58.9%	7	12.0%	49
New York	105,802	106,668	63,004	0	63,004	275,474	38.4%	60	22.9%	59
Niagara	16,742	17,004	3,796	0	3,796	37,542	44.6%	41	10.1%	44
Oneida	18,207	17,654	3,143	0	3,143	39,004	46.7%	33	8.1%	32
Onondaga	34,326	38,013	4,299	0	4,299	76,638	44.8%	40	5.6%	12
Ontario	9,139	10,405	2,303	2	2,305	21,849	41.8%	54	10.5%	45
Orange	44,204	21,191	9,800	0	9,800	75,195	58.8%	8	13.0%	53
Orleans	3,056	3,379	799	0	799	7,234	42.2%	53	11.0%	47
Oswego	9,318	7,894	1,379	14	1,393	18,605	50.1%	21	7.4%	28
Otsego	6,352	6,729	1,202	0	1,202	14,283	44.5%	44	8.4%	36
Putnam	9,998	5,598	1,185	0	1,185	16,781	59.6%	6	7.1%	24
Queens	121,845	68,496	71,747	0	71,747	262,088	46.5%	35	27.4%	60
Rensselaer	18,386	17,443	3,203	3	3,206	39,035	47.1%	32	8.2%	34
Richmond	42,181	22,327	11,507	0	11,507	76,015	55.5%	11	15.1%	55
Rockland	35,707	26,185	14,688	28	14,716	76,608	46.6%	34	19.2%	58
Saratoga	22,962	26,461	2,338	0	2,338	51,761	44.4%	45	4.5%	5
Schenectady	13,767	16,316	2,130	14	2,144	32,227	42.7%	51	6.6%	21
Schoharie	4,672	4,417	579	4	583	9,672	48.3%	30	6.0%	17
Schuyler	2,506	2,053	237	0	237	4,796	52.3%	17	4.9%	6
Seneca	4,190	3,441	349	4	353	7,984	52.5%	15	4.4%	4
St. Lawrence	9,405	7,686	3,492	0	3,492	20,583	45.7%	37	17.0%	57
Steuben	8,809	6,957	890	10	900	16,666	52.9%	14	5.3%	9
Suffolk	125,026	73,177	20,766	25	20,791	218,994	57.1%	9	9.5%	43
Sullivan	14,913	4,701	678	16	694	20,308	73.4%	1	3.3%	2
Tioga	7,283	3,286	688	4	692	11,261	64.7%	2	6.1%	19
Tompkins	7,269	10,002	938	2	940	18,211	39.9%	56	5.2%	8
Ulster	27,217	17,951	2,647	6	2,653	47,821	56.9%	10	5.5%	11
Warren	7,688	8,129	1,644	0	1,644	17,461	44.0%	47	9.4%	41
Washington	5,760	5,843	1,138	0	1,138	12,741	45.2%	39	8.9%	39
Wayne	6,645	7,240	524	2	526	14,411	46.1%	36	3.6%	3
Westchester	98,501	65,890	24,484	0	24,484	188,875	52.2%	18	13.0%	52
Wyoming	2,668	4,013	474	0	474	7,155	37.3%	62	6.6%	22
Yates	2,507	2,634	490	1	491	5,632	44.5%	42	8.7%	38
Total	**1,579,755**	**1,186,275**	**511,937**	**456**	**512,393**	**3,278,423**	**48.2%**		**15.6%**	

Percentage of Yes Votes to Total

% of Yes	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
	73.4%	44.5%	58.8%	44.4%	64.7%	56.9%	48.2%



% of Yes Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	64.9%	24.8%	65.3%	13.4%	29.0%	52.3%
Albany	-39.4%	0.0%	-24.3%	0.2%	-31.2%	-21.8%	-7.7%
Orange	-19.9%	32.1%	0.0%	32.4%	-9.1%	3.3%	22.0%
Saratoga	-39.5%	-0.2%	-24.5%	0.0%	-31.4%	-22.0%	-7.9%
Tioga	-11.9%	45.4%	10.0%	45.7%	0.0%	13.7%	34.2%
Ulster	-22.5%	27.9%	-3.2%	28.2%	-12.1%	0.0%	18.0%
NYS	-34.3%	8.3%	-18.0%	8.6%	-25.5%	-15.3%	0.0%

Sullivan County

Sullivan County has the highest percentage of Proposition 1 yes votes (74.4%) of the 6 counties in the study and all 62 counties in New York State.

Sullivan County's current percentage of yes votes is:

64.9% higher than Albany County
24.8% higher than Orange County
65.3% higher than Saratoga County
13.4% higher than Tioga County
29.0% higher than Ulster County
52.3% higher than the New York State Average

Albany County

Of the 6 counties in the study, Albany County has the 2nd lowest percentage of yes votes (44.5%) next to Saratoga County (44.4%).

Albany County's current percentage of yes votes is:

39.4% lower than Sullivan County
24.3% lower than Orange County
0.2% higher than Saratoga County
31.2% lower than Tioga County
21.8% lower than Ulster County
7.7% lower than the New York State Average

Orange County

Orange County has the 3rd highest percentage of yes votes (58.8%) of the 6 counties in the study.

Orange County's current percentage of yes votes is:

19.9% lower than Sullivan County
32.1% higher than Albany
32.4% higher than Saratoga County
9.1% lower than Tioga County
3.3% higher than Ulster County
22.0% higher than the New York State Average

Saratoga County

Saratoga County has the lowest percentage of yes votes (44.4%) of the 6 counties in the study.

Saratoga County's current percentage of yes votes is:
- 39.5% lower than Sullivan County
- 0.2% lower than Albany
- 24.5% lower than Orange County
- 31.4% lower than Tioga County
- 22.0% lower than Ulster County
- 7.9% lower than the New York State Average

Tioga County

Tioga County has the 2nd highest percentage of yes votes (64.7%) next to Sullivan County (73.4%).

Tioga County's current percentage of yes votes is:
- 11.9% lower than Sullivan County
- 45.4% higher than Albany
- 10.0% higher than Orange County
- 47.7% higher than Saratoga County
- 13.7% higher than Ulster County
- 34.2% higher than the New York State Average

Ulster County

Ulster County has the 3rd lowest percentage of yes votes (56.9%).

Ulster County's current percentage of yes votes is:
- 22.5% lower than Sullivan County
- 27.9% higher than Albany
- 3.2% lower than Orange County
- 28.2% higher than Saratoga County
- 12.1% lower than Tioga County
- 18.0% higher than the New York State Average

Percentage of yes votes - Section Conclusion

Percentage of Yes Votes Rank:
Sullivan 73.4%
Tioga 64.7%
Orange 58.8%
Ulster 56.9%
Albany 44.5%
Saratoga 44.4%
Sullivan County has the highest percentage of Proposition 1 yes votes (74.4%) of the 6 counties in the study and all 62 counties in New York State. It is also 13.4% higher than next highest county, Tioga (64.7%) and 65.3% higher than Saratoga County (44.4%), the lowest of the 6 counties in the study.

Factoring percentage of yes votes alone, it is clear that the state would benefit the most by placing a casino in the county where the community wants it the most.

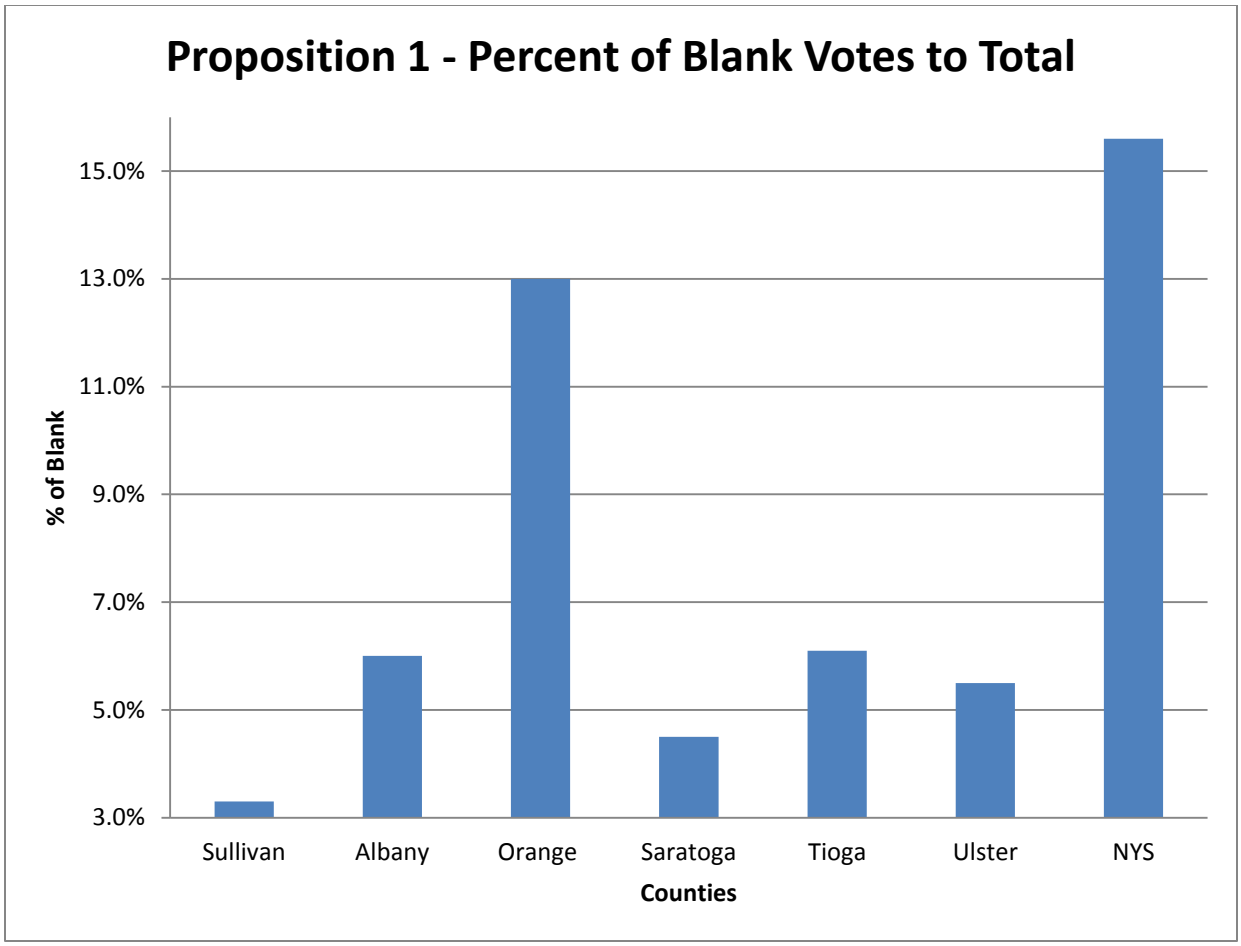
Proposition 1 Blank Votes

Blank votes for a proposition on an annual ballot with multiple topics are typically an indication of lack of knowledge or caring about the subject being voted for. While potentially due to a mistake on an individual level, county-wide counts are indicative of the former.

Blank votes are sometimes seen as a protest, but this usually occurs when there are candidates and the voter does not like any of them. Although a few voters may have "voted blank" on purpose to protest details of the proposition, we are again assuming it is more likely that the majority is simply not aware of Proposition 1 or does not care about it either way.

Percentage of Blank Votes to Total

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
% of Blank	3.3%	6.0%	13.0%	4.5%	6.1%	5.5%	15.6%



% of Blank Differentials

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	NYS
Sullivan	0.0%	-45.0%	-74.6%	-26.7%	-45.9%	-40.0%	-78.8%
Albany	81.8%	0.0%	-53.8%	33.3%	-1.6%	9.1%	-61.5%
Orange	293.9%	116.7%	0.0%	188.9%	113.1%	136.4%	-16.7%
Saratoga	36.4%	-25.0%	-65.4%	0.0%	-26.2%	-18.2%	-71.2%
Tioga	84.8%	1.7%	-53.1%	35.6%	0.0%	10.9%	-60.9%
Ulster	66.7%	-8.3%	-57.7%	22.2%	-9.8%	0.0%	-64.7%
NYS	372.7%	160.0%	20.0%	246.7%	155.7%	183.6%	0.0%

Sullivan County

Sullivan County has the lowest percentage of Proposition 1 blank votes (3.3%) of the 6 counties in the study and was 2nd lowest of all 62 counties in New York State.

Sullivan County's percentage of blank votes is:

- 45.0% lower than Albany County
- 74.6% lower than Orange County
- 26.7% lower than Saratoga County
- 45.9% lower than Tioga County
- 40.0% lower than Ulster County
- 78.8% lower than the New York State Average

Albany County

Of the 6 counties in the study, Albany County has the 3rd highest percentage of blank votes (6.0%).

Albany County's percentage of blank votes is:

- 81.8% higher than Sullivan County
- 53.8% lower than Orange County
- 33.3% higher than Saratoga County
- 1.6% lower than Tioga County
- 9.1% higher than Ulster County
- 61.5% lower than the New York State Average

Orange County

Orange County has the highest percentage of blank votes (13.0%) next to Tioga County (6.1%).

Orange County's percentage of blank votes is:

- 293.9% higher than Sullivan County
- 116.7% higher than Albany
- 188.9% higher than Saratoga County
- 113.1% higher than Tioga County
- 136.4% higher than Ulster County
- 16.7% lower than the New York State Average

Saratoga County

Saratoga County has the 2nd lowest percentage of blank votes (4.5%) behind Sullivan County (3.3).

Saratoga County's percentage of blank votes is:
- 36.4% higher than Sullivan County
- 25.0% lower than Albany
- 65.4% lower than Orange County
- 26.2% lower than Tioga County
- 18.2% lower than Ulster County
- 71.2% lower than the New York State Average

Tioga County

Tioga County has the 2nd highest percentage of blank votes (6.1%) next to Orange County (13.0%).

Tioga County's percentage of blank votes is:
- 84.8% higher than Sullivan County
- 1.7% higher than Albany
- 53.1% lower than Orange County
- 35.6% higher than Saratoga County
- 10.9% higher than Ulster County
- 60.9% lower than the New York State Average

Ulster County

Ulster County has the 3rd lowest percentage of blank votes (5.5%).

Ulster County's percentage of blank votes is:
- 66.7% higher than Sullivan County
- 8.3% lower than Albany
- 57.7% lower than Orange County
- 22.2% higher than Saratoga County
- 9.8% lower than Tioga County
- 64.7% lower than the New York State Average

Percentage of Blank Votes - Section Conclusion

Percentage of Blank Votes Rank:
Sullivan 3.3%
Saratoga 4.5%
Ulster 5.5%
Albany 6.0%
Tioga 6.1%
Orange 13.0%

Sullivan County has the lowest percentage of Proposition 1 blank votes (3.3%) of the 6 counties in the study and is 2nd lowest of all 62 counties in New York State. It is also 26.7% lower than the next county, Saratoga (4.5%) and 74.6% lower than Orange County (13.0%), the highest of the 6 counties in the study.

Factoring percentage of blank votes alone, one could assume Sullivan County is involved or cares the most about the vote and Orange County is involved or cares the least.

When adding the Yes Vote results, it is clear that Sullivan County cares and wants a casino whereas Saratoga cares the second most in the study, but does not want a casino.

It is also clear that the state would benefit the most by placing a casino in the county that is involved and cares the most, particularly if that county's Yes Vote was high showing majority public support for a casino.

County Healthcare Rankings

The *County Health Rankings & Roadmaps* program is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.[29]

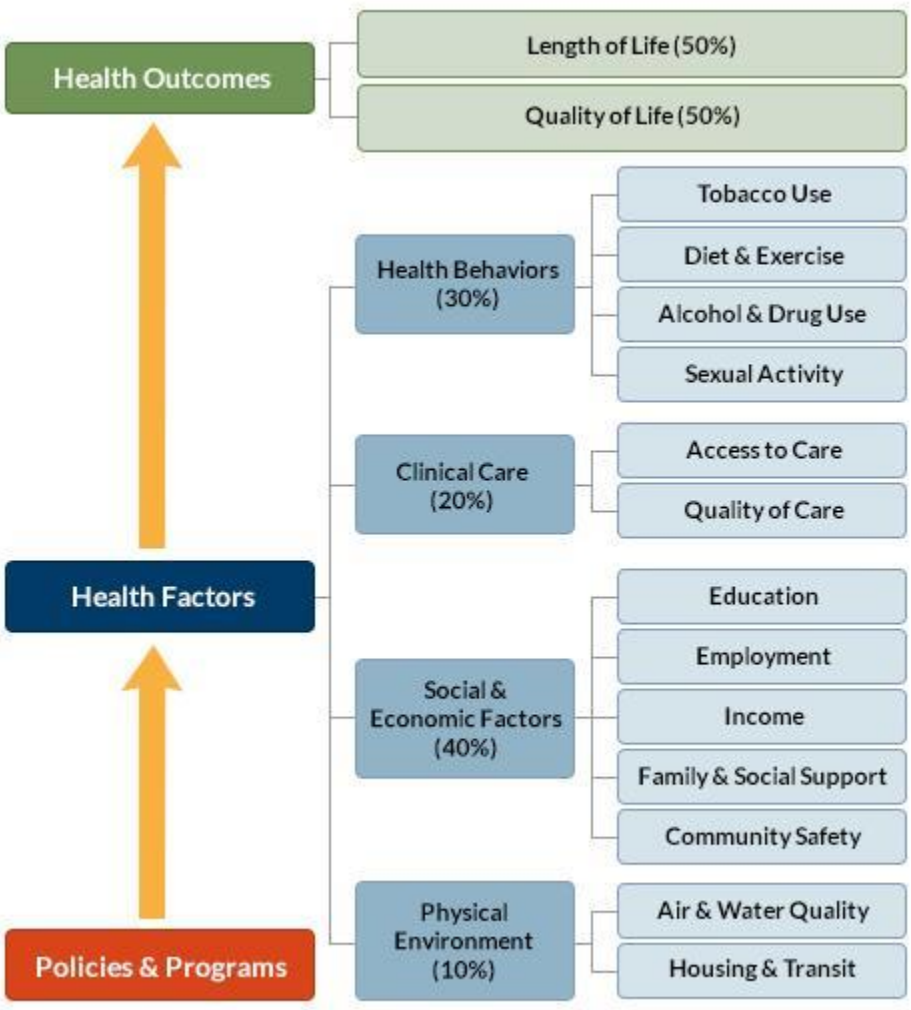
Ranking Methods
The *County Health Rankings*, a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, measure the health of nearly all counties in the nation and rank them within states. The *Rankings* are compiled using county-level measures from a variety of national and state data sources. These measures are standardized and combined using scientifically-informed weights.

What We Rank

[29] http://www.countyhealthrankings.org/

The *County Health Rankings* are based on counties and county equivalents (ranked places). Any entity that has its own Federal Information Processing Standard (FIPS) county code is included in the *Rankings*. We only rank counties and county equivalents within a state. The major goal of the *Rankings* is to raise awareness about the many factors that influence health and that health varies from place to place, not to produce a list of the healthiest 10 or 20 counties in the nation and only focus on that.

Ranking System



We suggest starting with the *County Health Rankings* model. It provides the foundation for the entire ranking process. Counties in each of the 50 states are ranked according to summaries of a variety of health measures. Those having high ranks, e.g. 1 or 2, are considered to be the "healthiest." Counties are ranked relative to the health of other counties in the same state. We calculate and rank eight summary composite scores:
Overall Health Outcomes
Health Outcomes – Length of life
Health Outcomes – Quality of life

Overall Health Factors
Health Factors – Health behaviors
Health Factors – Clinical care
Health Factors – Social and economic factors
Health Factors – Physical environment

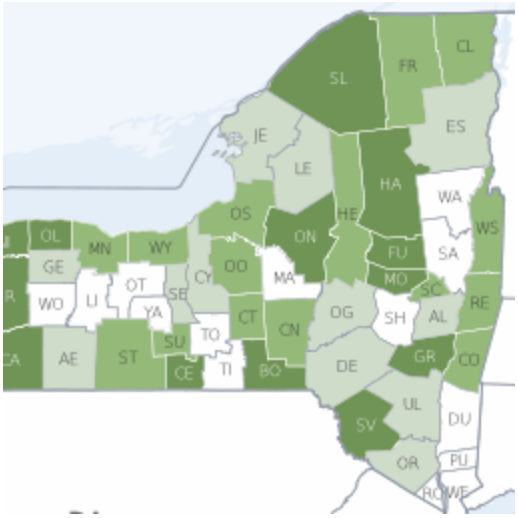
Data Sources and Measures

The *County Health Rankings* team synthesizes health information from a variety of national data sources to create the Rankings. Most of the data we use are public data available at no charge. Measures based on vital statistics, sexually transmitted infections, and Behavioral Risk Factor Surveillance System (BRFSS) survey data were calculated for us by staff at the National Center for Health Statistics and other units of the Centers for Disease Control and Prevention (CDC). Measures of health care quality were calculated for us by staff at The Dartmouth Institute.

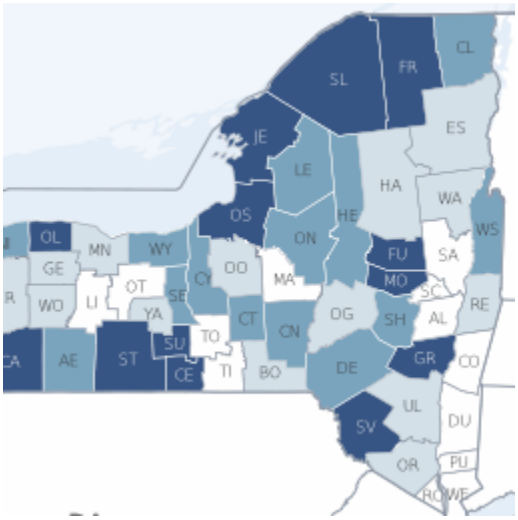
Data Quality
The *County Health Rankings* team draws upon the most reliable and valid measures available to compile the *Rankings*. Where possible, we provide the margin of errors (95% confidence intervals) for our measure values. In many cases, the values of specific measures in different counties are not statistically different from one another; however, when combined using our model, those various measures produce the different rankings.

Calculating Scores and Ranks
The *County Health Rankings* are compiled from many different types of data. To calculate the ranks, we first standardize each of the measures. The ranks are then calculated based on weighted sums of these of the standardized measures within each state. The county with the lowest score (best health) gets a rank of #1 for that state and the county with the highest score (worst health) is assigned a rank corresponding to the number of places we rank in that state.

Overall Rankings in Health Outcomes



Rank
1 - 16
17 - 31
32 - 46
47 - 62
Not Ranked (NR)



Rank
1 - 16
17 - 31
32 - 46
47 - 62
Not Ranked (NR)

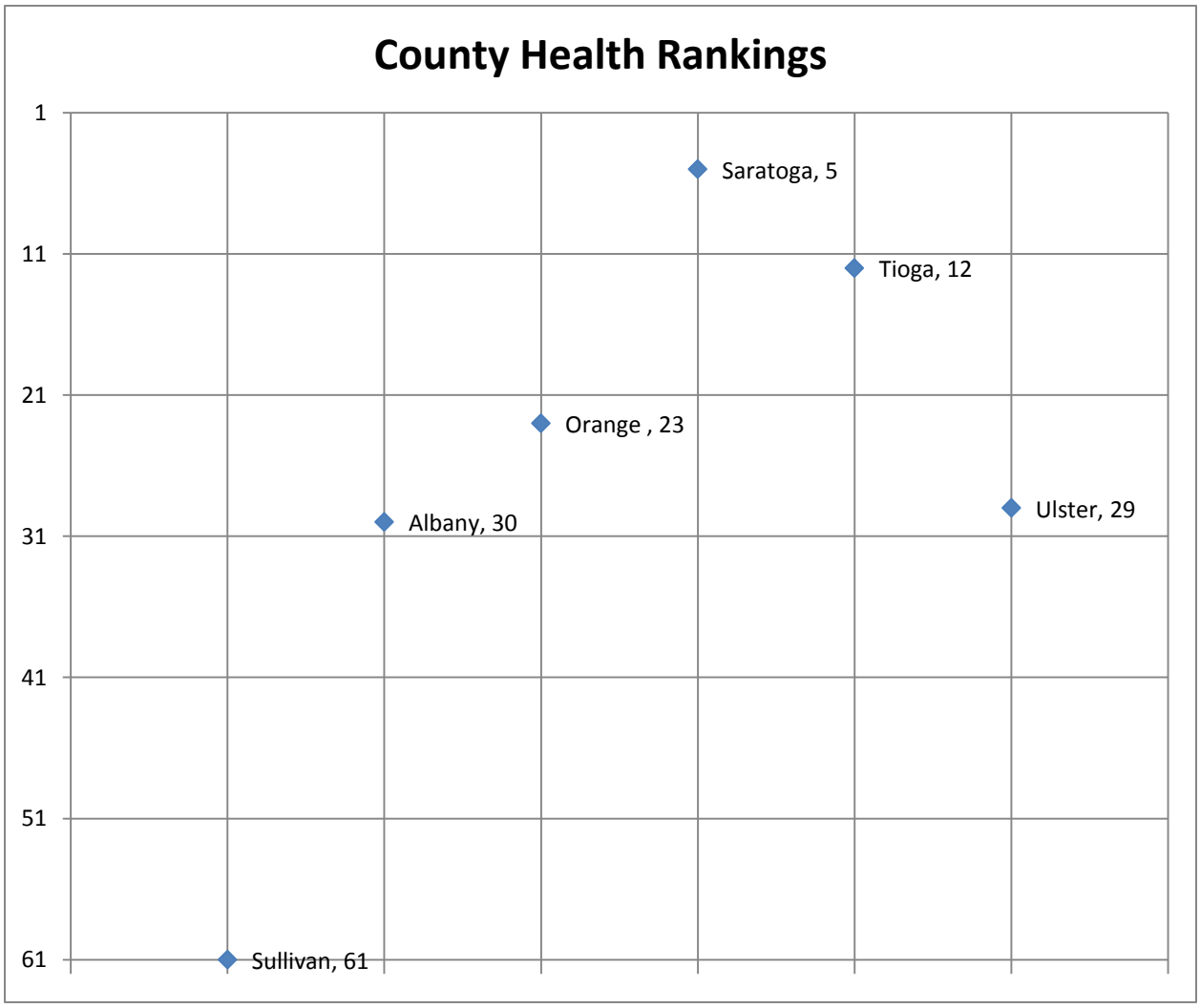
	New York	Sullivan (SV)x	Albany (AL)x	Orange (OR)x	Saratoga (SA)x	Tioga (TI)x	Ulster (UL)x
Health Outcomes		**61**	**30**	**23**	**5**	**12**	**29**
Length of Life		62	34	25	8	10	38
Premature death	5,650	7,799	6,004	5,774	4,858	4,922	6,159
Quality of Life		59	30	25	7	29	23
Poor or fair health	15%	15%	13%	17%	12%	14%	12%
Poor physical health days	3.5	4.4	2.6	3.4	3.1	3.7	3.9
Poor mental health days	3.4	3.4	3.3	3.1	2.6	3.6	3.4
Low birth weight	8.2%	9.0%	8.3%	7.2%	6.8%	7.3%	7.2%
Health Factors		60	10	21	3	16	29
Health Behaviors		56	17	22	9	25	34
Adult smoking	17%	26%	17%	21%	16%	14%	23%
Adult obesity	24%	29%	26%	24%	26%	29%	27%
Food environment index	8.3	8.1	8.4	8.8	9.3	9.3	8.5
Physical inactivity	24%	26%	23%	25%	20%	25%	21%
Access to exercise opportunities	89%	61%	84%	74%	76%	58%	75%
Excessive drinking	17%	19%	19%	21%	20%	20%	25%
Alcohol-impaired driving deaths	24%	37%	21%	26%	19%	52%	26%
Sexually transmitted infections	528	408	481	284	168	210	221
Teen births	24	31	17	23	14	30	18
Clinical Care		52	7	27	4	29	36
Uninsured	13%	14%	9%	12%	8%	10%	13%
Primary care physicians	1,216:1	2,136:1	1,069:1	1,431:1	1,292:1	3,926:1	1,362:1

	New York	Sullivan (SV)x	Albany (AL)x	Orange (OR)x	Saratoga (SA)x	Tioga (TI)x	Ulster (UL)x
Dentists	1,362:1	2,690:1	1,322:1	1,589:1	1,700:1	7,285:1	1,761:1
Mental health providers	525:1	1,241:1	444:1	726:1	887:1	864:1	413:1
Preventable hospital stays	65	62	62	70	60	64	68
Diabetic screening	85%	88%	86%	88%	89%	88%	85%
Mammography screening	63%	54%	66%	65%	66%	63%	63%
Social & Economic Factors		59	10	16	2	11	24
High school graduation	77%	74%	79%	83%	87%	84%	79%
Some college	65%	53%	75%	62%	75%	60%	63%
Unemployment	8.5%	9.6%	7.4%	8.3%	7.0%	8.4%	8.8%
Children in poverty	23%	27%	17%	19%	9%	17%	17%
Inadequate social support	24%	27%	20%	22%	15%	17%	19%
Children in single-parent households	35%	34%	36%	23%	23%	23%	32%
Violent crime	392	260	401	264	67	65	217
Injury deaths	40	65	40	41	32	40	50
Physical Environment		37	2	57	11	16	45
Air pollution - particulate matter	11.7	11.4	11.1	11.1	11.1	11.9	11.2
Drinking water violations	27%	0%	0%	27%	9%	0%	19%
Severe housing problems	24%	22%	16%	22%	12%	11%	19%
Driving alone to work	54%	77%	77%	72%	83%	83%	78%

	New York	Sullivan (SV)x	Albany (AL)x	Orange (OR)x	Saratoga (SA)x	Tioga (TI)x	Ulster (UL)x
Long commute - driving alone	35%	38%	19%	44%	37%	31%	37%

County Health Rank

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
Rank	61	30	23	5	12	29



CDC National Center for Health Statistics - Higher education and income levels keys to better health, according to annual report on nation's health

People with higher levels of education and higher income have lower rates of many chronic diseases compared to those with less education and lower income levels, according to Health,

United States, 2011 – the government's annual comprehensive report on Americans' health.

Health, United States, 2011 is the 35th annual report prepared by CDC's National Center for Health Statistics, and includes a compilation of health data through 2010 from a number of sources within the federal government and in the private sector.

This year's edition features a special section on socioeconomic status and health. Among the highlights:

- In 2007-2010, higher levels of education among the head of household resulted in lower rates of obesity among boys and girls 2-19 years of age. In households where the head of household had less than a high school education, 24 percent of boys and 22 percent of girls were obese. In households where the head had a bachelor's degree or higher, obesity prevalence was 11 percent for males aged 2-19 years and 7 percent for females.
- In 2007-2010, women 25 years of age and over with less than a bachelor's degree were more likely to be obese (39 percent-43 percent) than those with a bachelor's degree or higher (25 percent). Obesity prevalence among adult males did not vary consistently with level of education.
- In 2010, 31 percent of adults 25-64 years of age with a high school diploma or less education were current smokers, compared with 24 percent of adults with some college and 9 percent of adults with a bachelor's degree or higher. Overall, in the same year, 19 percent of U.S. adults age 18 and over were current cigarette smokers, a decline from 21 percent in 2009.
- Between 1996-2006, the gap in life expectancy at age 25 between those with less than a high school education and those with a bachelor's degree or higher increased by 1.9 years for men and 2.8 years for women. On average in 2006, 25-year-old men without a high school diploma had a life expectancy 9.3 years less than those with a Bachelor's degree or higher. Women without a high school diploma had a life expectancy 8.6 years less than those with a bachelor's degree or higher.
- Between 2000 and 2010, the percentage of children with a family income below 200 percent of poverty level who were uninsured decreased from 22 percent to 11 percent - 13 percent. The percentage with a family income at 200 percent to 399 percent of the poverty level who were uninsured decreased from 9 percent to 7 percent, and children with a family income at 400 percent of the poverty level who were uninsured decreased from 3 percent to 2 percent.

Other highlights from the report include:

- In 2010, half of adults 18 years of age and over failed to meet both the aerobic activity and the muscle-strengthening federal physical activity recommendations. Older adults were less likely than younger adults to meet the federal physical activity recommendations – 39 percent of adults 18-24 years of age did not meet the recommendations versus 70 percent of adults aged 75 and over.
- The percentage of women 40 years of age and over who had a mammogram in the past two years remained steady at 67 percent to 70 percent during the 10-year period from 2000 to 2010. During the same period, the percentage of adults aged 50-75 years with a recent colorectal test or procedure increased from 34 percent to 59 percent.

A special abridged edition, Health, United States, 2011: In Brief is also available as a companion to the full report. Both the full report and the abridged version are available at www.cdc.gov/nchs.[30]

County Healthcare Rankings - Section Conclusion

County Healthcare Rank:
Sullivan 61
Albany 30
Ulster 29
Orange 23
Tioga 12
Saratoga 5

Sullivan County ranks 2nd from lowest next to the Bronx out of the 62 counties in New York. The other 5 counties in the study rank above median with Saratoga ranking highest at 5th out of the 62 counties in New York State.

According to the CDC study above increases in education and income levels are keys to better health. Placing a casino in a county with the lowest income, highest unemployment, and worse health rankings could conspire to have the biggest impact on Medicaid costs.

Crime Statistics

New York State Division of Criminal Justice Services - Index Crimes Reported: 2008 - 2012[31]

[30] http://www.cdc.gov/media/releases/2012/p0516_higher_education.html
[31] http://www.criminaljustice.ny.gov/crimnet/ojsa/indexcrimes/county_totals.htm

Sullivan County					Violent Crime						Property Crime			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Sullivan	Fallsburgh Town PD	2008		**233**	**16**	0	3	2	11	**217**	66	141	10
Sullivan	Fallsburgh Town PD	2009		**256**	**23**	1	3	2	17	**233**	94	136	3
Sullivan	Fallsburgh Town PD	2010		**240**	**32**	2	3	2	25	**208**	64	135	9
Sullivan	Fallsburgh Town PD	2011		**271**	**19**	1	0	1	17	**252**	86	163	3
Sullivan	Fallsburgh Town PD	2012		**228**	**13**	0	1	2	10	**215**	83	126	6
Sullivan	Liberty Vg PD	2008		**179**	**20**	1	4	4	11	**159**	35	118	6
Sullivan	Liberty Vg PD	2009		**182**	**7**	0	2	0	5	**175**	41	129	5
Sullivan	Liberty Vg PD	2010		**197**	**20**	0	3	0	17	**177**	35	138	4
Sullivan	Liberty Vg PD	2011		**279**	**35**	0	4	6	25	**244**	75	161	8
Sullivan	Liberty Vg PD	2012		**250**	**26**	0	7	6	13	**224**	54	167	3
Sullivan	Monticello Vg PD	2008		**311**	**36**	0	3	15	18	**275**	85	184	6
Sullivan	Monticello Vg PD	2009		**241**	**49**	1	3	16	29	**192**	35	154	3
Sullivan	Monticello Vg PD	2010		**227**	**59**	1	3	17	38	**168**	60	103	5
Sullivan	Monticello Vg PD	2011		**342**	**76**	0	3	14	59	**266**	105	153	8
Sullivan	Monticello Vg PD	2012		**316**	**52**	0	10	8	34	**264**	79	182	3
Sullivan	Neversink PCT (NYC-BWSP)	2008		**2**	**0**	0	0	0	0	**2**	2	0	0
Sullivan	Neversink PCT (NYC-BWSP)	2009		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Neversink PCT (NYC-BWSP)	2010		**1**	**0**	0	0	0	0	**1**	0	1	0
Sullivan	Neversink PCT (NYC-BWSP)	2011		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Neversink PCT (NYC-BWSP)	2012		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Sullivan County Park PD	2008		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Sullivan County Park PD	2009		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Sullivan County Park PD	2010		**1**	**0**	0	0	0	0	**1**	1	0	0
Sullivan	Sullivan County Park PD	2011		**1**	**0**	0	0	0	0	**1**	0	1	0

Sullivan	Sullivan County Park PD	2012		**0**	**0**	0	0	0	0	**0**	0	0	0
Sullivan	Sullivan County Sheriff	2008		**510**	**28**	1	1	4	22	**482**	137	327	18
Sullivan	Sullivan County Sheriff	2009		**440**	**32**	0	3	3	26	**408**	112	288	8
Sullivan	Sullivan County Sheriff	2010		**584**	**41**	0	3	10	28	**543**	143	387	13
Sullivan	Sullivan County Sheriff	2011		**555**	**25**	0	2	3	20	**530**	111	411	8
Sullivan	Sullivan County Sheriff	2012		**590**	**27**	0	2	5	20	**563**	164	392	7
Sullivan	Sullivan County State Police	2008		**569**	**95**	1	16	2	76	**474**	181	275	18
Sullivan	Sullivan County State Police	2009		**420**	**74**	1	11	7	55	**346**	150	182	14
Sullivan	Sullivan County State Police	2010		**438**	**63**	0	12	5	46	**375**	123	232	20
Sullivan	Sullivan County State Police	2011		**472**	**44**	1	11	1	31	**428**	167	244	17
Sullivan	Sullivan County State Police	2012		**533**	**61**	1	14	8	38	**472**	183	268	21
Sullivan	Woodridge Vg PD	2008	4	**2**	**0**	0	0	0	0	**2**	0	2	0
Sullivan	Woodridge Vg PD	2009	9	**5**	**1**	0	0	0	1	**4**	1	2	1
Sullivan	Woodridge Vg PD	2010	8	**20**	**4**	0	0	0	4	**16**	8	8	0
Sullivan	Woodridge Vg PD	2011	11	**18**	**1**	0	0	0	1	**17**	5	12	0
Sullivan	Woodridge Vg PD	2012	8	**13**	**2**	0	0	0	2	**11**	5	5	1
Sullivan	County Total	2008		**1,806**	**195**	3	27	27	138	**1,611**	506	1,047	58
Sullivan	County Total	2009		**1,544**	**186**	3	22	28	133	**1,358**	433	891	34
Sullivan	County Total	2010		**1,708**	**219**	3	24	34	158	**1,489**	434	1,004	51
Sullivan	County Total	2011		**1,938**	**200**	2	20	25	153	**1,738**	549	1,145	44
Sullivan	County Total	2012		**1,930**	**181**	1	34	29	117	**1,749**	568	1,140	41

Albany County					Violent Crime						Property Crime			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Albany	Albany City PD	2008		**5,489**	**1,059**	10	48	372	629	**4,430**	1,034	3,171	225
Albany	Albany City PD	2009		**5,255**	**1,004**	9	45	327	623	**4,251**	878	3,140	233
Albany	Albany City PD	2010		**5,623**	**980**	3	41	316	620	**4,643**	926	3,491	226
Albany	Albany City PD	2011		**5,544**	**936**	4	31	321	580	**4,608**	892	3,548	168
Albany	Albany City PD	2012		**5,121**	**798**	4	41	246	507	**4,323**	886	3,285	152
Albany	Albany County (RR-CSX)	2008		**5**	**0**	0	0	0	0	**5**	0	5	0
Albany	Albany County Park PD	2008		**3**	**0**	0	0	0	0	**3**	1	2	0
Albany	Albany County Park PD	2009		**4**	**0**	0	0	0	0	**4**	0	4	0
Albany	Albany County Park PD	2010		**4**	**0**	0	0	0	0	**4**	0	4	0
Albany	Albany County Park PD	2011		**2**	**0**	0	0	0	0	**2**	2	0	0
Albany	Albany County Park PD	2012		**2**	**0**	0	0	0	0	**2**	0	2	0
Albany	Albany County Sheriff	2008		**136**	**33**	0	4	3	26	**103**	28	74	1
Albany	Albany County Sheriff	2009		**200**	**25**	0	1	1	23	**175**	30	136	9
Albany	Albany County Sheriff	2010		**171**	**12**	0	2	0	10	**159**	22	122	15
Albany	Albany County Sheriff	2011		**196**	**17**	0	6	1	10	**179**	43	132	4
Albany	Albany County Sheriff	2012		**168**	**5**	1	0	0	4	**163**	36	124	3
Albany	Albany County State Police	2008		**239**	**18**	0	4	1	13	**221**	18	199	4
Albany	Albany County State Police	2009		**150**	**8**	1	0	1	6	**142**	20	122	0
Albany	Albany County State Police	2010		**242**	**14**	0	3	2	9	**228**	21	199	8
Albany	Albany County State Police	2011		**178**	**7**	0	1	0	6	**171**	17	148	6
Albany	Albany County State Police	2012		**147**	**13**	0	6	0	7	**134**	8	119	7
Albany	Altamont Vg PD	2008		**26**	**0**	0	0	0	0	**26**	2	24	0
Albany	Altamont Vg PD	2009		**14**	**0**	0	0	0	0	**14**	1	12	1
Albany	Altamont Vg PD	2010		**14**	**0**	0	0	0	0	**14**	3	11	0
Albany	Altamont Vg PD	2011		**10**	**1**	0	0	0	1	**9**	2	6	1
Albany	Altamont Vg PD	2012		**20**	**1**	0	0	0	1	**19**	2	16	1

Albany	Bethlehem Town PD	2008		**525**	**20**	0	4	4	12	**505**	75	422	8
Albany	Bethlehem Town PD	2009		**571**	**30**	0	2	6	22	**541**	81	451	9
Albany	Bethlehem Town PD	2010		**515**	**20**	0	6	1	13	**495**	87	399	9
Albany	Bethlehem Town PD	2011		**540**	**26**	0	5	6	15	**514**	92	412	10
Albany	Bethlehem Town PD	2012		**485**	**16**	0	2	2	12	**469**	64	402	3
Albany	Coeymans Town PD	2008		**98**	**26**	0	0	2	24	**72**	16	52	4
Albany	Coeymans Town PD	2009		**98**	**31**	1	1	2	27	**67**	20	45	2
Albany	Coeymans Town PD	2010		**63**	**15**	0	0	1	14	**48**	11	35	2
Albany	Coeymans Town PD	2011		**81**	**20**	0	0	1	19	**61**	11	43	7
Albany	Coeymans Town PD	2012		**126**	**21**	0	0	0	21	**105**	22	71	12
Albany	Cohoes City PD	2008		**250**	**61**	0	3	6	52	**189**	42	127	20
Albany	Cohoes City PD	2009		**387**	**50**	0	3	12	35	**337**	93	226	18
Albany	Cohoes City PD	2010		**345**	**40**	0	1	11	28	**305**	92	198	15
Albany	Cohoes City PD	2011		**333**	**35**	1	1	11	22	**298**	111	174	13
Albany	Cohoes City PD	2012		**339**	**42**	0	4	7	31	**297**	90	198	9
Albany	Colonie Town PD	2008		**2,364**	**54**	0	1	33	20	**2,310**	239	2,032	39
Albany	Colonie Town PD	2009		**2,345**	**61**	0	1	29	31	**2,284**	205	2,037	42
Albany	Colonie Town PD	2010		**2,313**	**54**	0	3	31	20	**2,259**	228	1,988	43
Albany	Colonie Town PD	2011		**2,251**	**54**	2	0	32	20	**2,197**	224	1,955	18
Albany	Colonie Town PD	2012		**2,163**	**46**	0	0	29	17	**2,117**	214	1,847	56
Albany	Green Island Vg PD	2008		**70**	**4**	0	3	1	0	**66**	16	46	4
Albany	Green Island Vg PD	2009		**110**	**8**	0	0	1	7	**102**	14	88	0
Albany	Green Island Vg PD	2010		**65**	**6**	0	0	0	6	**59**	11	43	5
Albany	Green Island Vg PD	2011		**68**	**3**	0	1	0	2	**65**	12	48	5
Albany	Green Island Vg PD	2012		**62**	**4**	0	2	0	2	**58**	14	43	1
Albany	Guilderland Town PD	2008		**866**	**24**	0	0	17	7	**842**	74	757	11
Albany	Guilderland Town PD	2009		**736**	**19**	0	3	8	8	**717**	48	658	11
Albany	Guilderland Town PD	2010		**993**	**11**	0	4	3	4	**982**	67	906	9
Albany	Guilderland Town PD	2011		**873**	**27**	0	1	10	16	**846**	79	762	5

Albany	Guilderland Town PD	2012		**697**	**24**	0	5	10	9	**673**	52	619	2
Albany	Menands Vg PD	2008		**148**	**10**	0	2	4	4	**138**	30	103	5
Albany	Menands Vg PD	2009		**166**	**9**	0	0	3	6	**157**	18	129	10
Albany	Menands Vg PD	2010		**175**	**6**	0	0	2	4	**169**	27	141	1
Albany	Menands Vg PD	2011		**145**	**5**	0	1	3	1	**140**	23	115	2
Albany	Menands Vg PD	2012		**172**	**8**	0	1	4	3	**164**	37	122	5
Albany	SUNY - Albany	2008		**223**	**12**	0	3	3	6	**211**	38	173	0
Albany	SUNY - Albany	2009		**219**	**6**	0	2	1	3	**213**	57	154	2
Albany	SUNY - Albany	2010		**235**	**3**	0	1	0	2	**232**	59	169	4
Albany	SUNY - Albany	2011		**244**	**9**	0	1	1	7	**235**	29	206	0
Albany	SUNY - Albany	2012		**195**	**6**	0	3	2	1	**189**	19	170	0
Albany	Watervliet City PD	2008		**307**	**33**	0	1	8	24	**274**	47	217	10
Albany	Watervliet City PD	2009		**360**	**40**	1	3	9	27	**320**	57	249	14
Albany	Watervliet City PD	2010		**283**	**23**	0	0	2	21	**260**	42	201	17
Albany	Watervliet City PD	2011		**258**	**26**	0	0	10	16	**232**	33	187	12
Albany	Watervliet City PD	2012		**263**	**26**	0	3	14	9	**237**	53	173	11
Albany	County Total	2008		**10,749**	**1,354**	10	73	454	817	**9,395**	1,660	7,404	331
Albany	County Total	2009		**10,615**	**1,291**	12	61	400	818	**9,324**	1,522	7,451	351
Albany	County Total	2010		**11,041**	**1,184**	3	61	369	751	**9,857**	1,596	7,907	354
Albany	County Total	2011		**10,723**	**1,166**	7	48	396	715	**9,557**	1,570	7,736	251
Albany	County Total	2012		**9,960**	**1,010**	5	67	314	624	**8,950**	1,497	7,191	262

Orange County					Violent Crime					Property Crime			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Orange	Blooming Grove Town PD	2008		**162**	**8**	0	1	1	6	**154**	19	118	17
Orange	Blooming Grove Town PD	2009		**101**	**6**	0	0	0	6	**95**	22	67	6
Orange	Blooming Grove Town PD	2010		**139**	**16**	0	2	0	14	**123**	21	93	9
Orange	Blooming Grove Town PD	2011		**111**	**7**	0	0	0	7	**104**	25	74	5
Orange	Blooming Grove Town PD	2012		**125**	**5**	0	1	1	3	**120**	31	83	6
Orange	Chester Town PD	2008		**43**	**2**	0	0	0	2	**41**	4	35	2
Orange	Chester Town PD	2009		**22**	**3**	0	0	0	3	**19**	3	16	0
Orange	Chester Town PD	2010		**61**	**0**	0	0	0	0	**61**	10	50	1
Orange	Chester Town PD	2011		**9**	**1**	0	1	0	0	**8**	1	6	1
Orange	Chester Town PD	2012		**22**	**1**	0	0	0	1	**21**	4	14	3
Orange	Chester Vg PD	2008		**140**	**2**	0	0	1	1	**138**	7	129	2
Orange	Chester Vg PD	2009		**158**	**5**	0	1	1	3	**153**	4	148	1
Orange	Chester Vg PD	2010		**152**	**4**	0	0	3	1	**148**	5	142	1
Orange	Chester Vg PD	2011		**120**	**5**	0	0	0	5	**115**	6	108	1
Orange	Chester Vg PD	2012		**126**	**6**	0	0	3	3	**120**	7	112	1
Orange	Cornwall Town PD	2008		**145**	**10**	0	1	3	6	**135**	25	104	6
Orange	Cornwall Town PD	2009		**70**	**0**	0	0	0	0	**70**	8	62	0
Orange	Cornwall Town PD	2010		**75**	**0**	0	0	0	0	**75**	6	69	0
Orange	Cornwall Town PD	2011		**107**	**3**	0	0	0	3	**104**	13	90	1
Orange	Cornwall Town PD	2012		**90**	**2**	0	1	0	1	**88**	14	74	0
Orange	Cornwall-On-Hudson Vg PD	2008		**28**	**0**	0	0	0	0	**28**	2	26	0
Orange	Cornwall-On-Hudson Vg PD	2009	8	**23**	**0**	0	0	0	0	**23**	0	22	1
Orange	Cornwall-On-Hudson Vg PD	2010	0										
Orange	Cornwall-On-Hudson Vg PD	2011	0										
Orange	Cornwall-On-Hudson Vg PD	2012		**42**	**0**	0	0	0	0	**42**	9	33	0

Orange	Crawford Town PD	2008		**209**	**12**	0	1	2	9	**197**	22	171	4
Orange	Crawford Town PD	2009		**95**	**2**	0	0	1	1	**93**	7	84	2
Orange	Crawford Town PD	2010		**79**	**11**	0	0	0	11	**68**	11	52	5
Orange	Crawford Town PD	2011		**134**	**12**	0	0	4	8	**122**	29	89	4
Orange	Crawford Town PD	2012		**162**	**7**	0	0	1	6	**155**	43	108	4
Orange	Deer Park Town PD	2008		**145**	**4**	0	0	1	3	**141**	30	108	3
Orange	Deer Park Town PD	2009		**62**	**2**	0	0	1	1	**60**	13	45	2
Orange	Deer Park Town PD	2010		**151**	**8**	0	0	3	5	**143**	60	82	1
Orange	Deer Park Town PD	2011		**214**	**16**	0	1	3	12	**198**	69	125	4
Orange	Deer Park Town PD	2012		**167**	**6**	0	0	2	4	**161**	63	94	4
Orange	Florida Vg PD	2008		**42**	**2**	0	0	0	2	**40**	7	33	0
Orange	Florida Vg PD	2009		**28**	**4**	0	0	0	4	**24**	3	20	1
Orange	Florida Vg PD	2010		**34**	**0**	0	0	0	0	**34**	5	29	0
Orange	Florida Vg PD	2011		**12**	**0**	0	0	0	0	**12**	2	10	0
Orange	Florida Vg PD	2012		**7**	**0**	0	0	0	0	**7**	2	5	0
Orange	Goshen Town PD	2008	11	**100**	**4**	0	0	0	4	**96**	13	77	6
Orange	Goshen Town PD	2009		**89**	**3**	0	0	0	3	**86**	16	66	4
Orange	Goshen Town PD	2010		**55**	**5**	0	0	1	4	**50**	12	35	3
Orange	Goshen Town PD	2011		**84**	**3**	0	0	0	3	**81**	21	57	3
Orange	Goshen Town PD	2012		**115**	**4**	0	0	0	4	**111**	19	89	3
Orange	Goshen Vg PD	2008		**108**	**7**	0	0	0	7	**101**	20	79	2
Orange	Goshen Vg PD	2009		**92**	**8**	0	0	1	7	**84**	13	70	1
Orange	Goshen Vg PD	2010		**81**	**3**	0	0	0	3	**78**	11	66	1
Orange	Goshen Vg PD	2011		**81**	**3**	0	0	0	3	**78**	7	70	1
Orange	Goshen Vg PD	2012		**81**	**3**	0	0	0	3	**78**	8	69	1
Orange	Greenwood Lake Vg PD	2008		**66**	**17**	0	1	0	16	**49**	8	40	1
Orange	Greenwood Lake Vg PD	2009		**41**	**4**	0	0	0	4	**37**	6	28	3
Orange	Greenwood Lake Vg PD	2010		**55**	**4**	0	1	1	2	**51**	11	39	1
Orange	Greenwood Lake Vg PD	2011		**24**	**3**	0	0	1	2	**21**	12	9	0

Orange	Greenwood Lake Vg PD	2012		**30**	**6**	0	0	0	6	**24**	4	20	0
Orange	Harriman Vg PD	2008		**43**	**1**	0	0	0	1	**42**	5	36	1
Orange	Harriman Vg PD	2009		**16**	**0**	0	0	0	0	**16**	5	11	0
Orange	Harriman Vg PD	2010		**14**	**1**	0	0	1	0	**13**	3	10	0
Orange	Harriman Vg PD	2011		**11**	**4**	0	0	0	4	**7**	2	5	0
Orange	Harriman Vg PD	2012		**30**	**2**	0	0	1	1	**28**	0	26	2
Orange	Highland Falls Vg PD	2008	11	**85**	**7**	0	0	1	6	**78**	16	62	0
Orange	Highland Falls Vg PD	2009		**27**	**5**	0	0	2	3	**22**	5	17	0
Orange	Highland Falls Vg PD	2010		**47**	**0**	0	0	0	0	**47**	6	41	0
Orange	Highland Falls Vg PD	2011	11	**47**	**7**	0	0	2	5	**40**	10	30	0
Orange	Highland Falls Vg PD	2012	10	**52**	**7**	0	1	1	5	**45**	12	32	1
Orange	Highlands Town PD	2008		**11**	**0**	0	0	0	0	**11**	1	10	0
Orange	Highlands Town PD	2009		**6**	**0**	0	0	0	0	**6**	2	3	1
Orange	Highlands Town PD	2010		**4**	**0**	0	0	0	0	**4**	0	3	1
Orange	Highlands Town PD	2011		**12**	**0**	0	0	0	0	**12**	4	8	0
Orange	Highlands Town PD	2012		**12**	**0**	0	0	0	0	**12**	2	10	0
Orange	Maybrook Vg PD	2008		**32**	**1**	0	0	1	0	**31**	5	26	0
Orange	Maybrook Vg PD	2009		**34**	**0**	0	0	0	0	**34**	10	23	1
Orange	Maybrook Vg PD	2010	11	**11**	**0**	0	0	0	0	**11**	5	5	1
Orange	Maybrook Vg PD	2011	0										
Orange	Maybrook Vg PD	2012	1	**2**	**0**	0	0	0	0	**2**	0	2	0
Orange	Middletown City PD	2008		**1,193**	**177**	5	14	75	83	**1,016**	216	755	45
Orange	Middletown City PD	2009		**1,179**	**155**	1	8	57	89	**1,024**	204	794	26
Orange	Middletown City PD	2010		**1,321**	**150**	1	7	63	79	**1,171**	194	949	28
Orange	Middletown City PD	2011		**1,198**	**191**	2	12	67	110	**1,007**	188	792	27
Orange	Middletown City PD	2012		**1,175**	**227**	2	14	94	117	**948**	206	723	19
Orange	Monroe Vg PD	2008		**246**	**22**	0	0	8	14	**224**	24	196	4
Orange	Monroe Vg PD	2009		**255**	**24**	0	0	2	22	**231**	22	203	6
Orange	Monroe Vg PD	2010		**289**	**19**	0	6	7	6	**270**	37	225	8

Orange	Monroe Vg PD	2011		**216**	**8**	0	1	0	7	**208**	22	182	4
Orange	Monroe Vg PD	2012		**187**	**24**	0	3	6	15	**163**	21	140	2
Orange	Montgomery Town PD	2008	11	**152**	**4**	0	0	2	2	**148**	18	127	3
Orange	Montgomery Town PD	2009	0										
Orange	Montgomery Town PD	2010	0										
Orange	Montgomery Town PD	2011	6	**15**	**2**	0	0	0	2	**13**	3	9	1
Orange	Montgomery Town PD	2012		**90**	**7**	0	2	0	5	**83**	17	63	3
Orange	Montgomery Vg PD	2008		**55**	**0**	0	0	0	0	**55**	0	55	0
Orange	Montgomery Vg PD	2009		**18**	**0**	0	0	0	0	**18**	0	18	0
Orange	Montgomery Vg PD	2010		**11**	**0**	0	0	0	0	**11**	0	11	0
Orange	Montgomery Vg PD	2011		**34**	**2**	0	0	0	2	**32**	2	30	0
Orange	Montgomery Vg PD	2012		**19**	**0**	0	0	0	0	**19**	0	19	0
Orange	Mount Hope Town PD	2008		**53**	**1**	0	1	0	0	**52**	9	37	6
Orange	Mount Hope Town PD	2009		**38**	**3**	0	0	0	3	**35**	11	21	3
Orange	Mount Hope Town PD	2010		**31**	**2**	0	0	0	2	**29**	4	23	2
Orange	Mount Hope Town PD	2011		**29**	**0**	0	0	0	0	**29**	10	18	1
Orange	Mount Hope Town PD	2012		**29**	**0**	0	0	0	0	**29**	4	24	1
Orange	New Windsor Town PD	2008		**554**	**28**	0	0	10	18	**526**	89	425	12
Orange	New Windsor Town PD	2009		**544**	**29**	0	5	6	18	**515**	63	436	16
Orange	New Windsor Town PD	2010		**496**	**24**	1	0	8	15	**472**	85	372	15
Orange	New Windsor Town PD	2011		**524**	**26**	0	3	5	18	**498**	95	391	12
Orange	New Windsor Town PD	2012		**674**	**37**	0	1	6	30	**637**	93	531	13
Orange	Newburgh City PD	2008		**1,539**	**476**	7	13	162	294	**1,063**	333	640	90
Orange	Newburgh City PD	2009		**1,530**	**465**	4	8	187	266	**1,065**	316	661	88
Orange	Newburgh City PD	2010		**1,654**	**522**	11	7	195	309	**1,132**	342	724	66
Orange	Newburgh City PD	2011		**1,770**	**527**	4	11	254	258	**1,243**	401	782	60
Orange	Newburgh City PD	2012		**1,761**	**544**	5	19	214	306	**1,217**	341	814	62
Orange	Newburgh Town PD	2008		**1,145**	**29**	0	3	17	9	**1,116**	116	951	49
Orange	Newburgh Town PD	2009		**1,204**	**41**	3	4	14	20	**1,163**	101	1,033	29

Orange	Newburgh Town PD	2010		**1,290**	**31**	2	0	11	18	**1,259**	101	1,126	32
Orange	Newburgh Town PD	2011		**1,172**	**42**	0	0	22	20	**1,130**	113	981	36
Orange	Newburgh Town PD	2012		**1,537**	**31**	0	2	13	16	**1,506**	131	1,336	39
Orange	Orange County (RR-CSX)	2008		**2**	**0**	0	0	0	0	**2**	0	2	0
Orange	Orange County MTA	2008		**6**	**0**	0	0	0	0	**6**	0	6	0
Orange	Orange County MTA	2009		**7**	**0**	0	0	0	0	**7**	0	6	1
Orange	Orange County MTA	2010		**7**	**0**	0	0	0	0	**7**	0	6	1
Orange	Orange County MTA	2011		**5**	**0**	0	0	0	0	**5**	0	3	2
Orange	Orange County MTA	2012		**3**	**0**	0	0	0	0	**3**	0	1	2
Orange	Orange County Park PD	2008		**10**	**0**	0	0	0	0	**10**	2	8	0
Orange	Orange County Park PD	2009		**5**	**1**	0	0	0	1	**4**	1	3	0
Orange	Orange County Park PD	2010		**7**	**2**	0	0	0	2	**5**	2	2	1
Orange	Orange County Park PD	2011		**5**	**0**	0	0	0	0	**5**	1	4	0
Orange	Orange County Park PD	2012		**10**	**2**	0	0	0	2	**8**	1	7	0
Orange	Orange County Sheriff	2008		**58**	**11**	0	1	1	9	**47**	23	22	2
Orange	Orange County Sheriff	2009		**38**	**12**	0	0	1	11	**26**	2	22	2
Orange	Orange County Sheriff	2010		**50**	**15**	0	0	0	15	**35**	0	35	0
Orange	Orange County Sheriff	2011		**45**	**7**	0	0	0	7	**38**	0	35	3
Orange	Orange County Sheriff	2012		**23**	**6**	0	0	0	6	**17**	2	12	3
Orange	Orange County State Police	2008		**975**	**129**	1	22	16	90	**846**	93	722	31
Orange	Orange County State Police	2009		**918**	**58**	1	9	7	41	**860**	86	761	13
Orange	Orange County State Police	2010		**1,016**	**70**	1	16	15	38	**946**	85	830	31
Orange	Orange County State Police	2011		**1,168**	**60**	1	21	10	28	**1,108**	145	936	27
Orange	Orange County State Police	2012		**953**	**48**	1	12	6	29	**905**	114	760	31
Orange	Port Jervis City PD	2008		**229**	**24**	0	3	4	17	**205**	37	165	3
Orange	Port Jervis City PD	2009		**321**	**30**	0	3	8	19	**291**	57	228	6
Orange	Port Jervis City PD	2010		**338**	**29**	0	5	7	17	**309**	57	247	5
Orange	Port Jervis City PD	2011		**314**	**18**	1	1	7	9	**296**	62	227	7
Orange	Port Jervis City PD	2012		**306**	**35**	1	4	8	22	**271**	66	194	11

Orange	Tuxedo Town PD	2008		**15**	**1**	0	0	0	1	**14**	2	11	1
Orange	Tuxedo Town PD	2009		**4**	**3**	0	0	0	3	**1**	0	1	0
Orange	Tuxedo Town PD	2010		**3**	**1**	0	1	0	0	**2**	0	2	0
Orange	Tuxedo Town PD	2011		**0**	**0**	0	0	0	0	**0**	0	0	0
Orange	Tuxedo Town PD	2012		**1**	**1**	0	0	0	1	**0**	0	0	0
Orange	Walden Vg PD	2008		**134**	**20**	0	1	4	15	**114**	8	102	4
Orange	Walden Vg PD	2009		**122**	**27**	0	5	2	20	**95**	11	78	6
Orange	Walden Vg PD	2010		**80**	**29**	0	3	1	25	**51**	7	42	2
Orange	Walden Vg PD	2011		**111**	**21**	0	2	1	18	**90**	14	72	4
Orange	Walden Vg PD	2012		**150**	**15**	0	2	2	11	**135**	16	117	2
Orange	Wallkill Town PD	2008		**809**	**28**	0	3	16	9	**781**	90	667	24
Orange	Wallkill Town PD	2009		**976**	**34**	0	2	22	10	**942**	55	856	31
Orange	Wallkill Town PD	2010		**885**	**27**	0	0	15	12	**858**	100	745	13
Orange	Wallkill Town PD	2011		**827**	**23**	0	5	8	10	**804**	83	701	20
Orange	Wallkill Town PD	2012		**743**	**24**	0	1	9	14	**719**	57	650	12
Orange	Warwick Town PD	2008		**179**	**3**	0	2	1	0	**176**	26	148	2
Orange	Warwick Town PD	2009		**187**	**6**	0	0	2	4	**181**	33	147	1
Orange	Warwick Town PD	2010		**193**	**12**	1	1	5	5	**181**	37	139	5
Orange	Warwick Town PD	2011		**190**	**7**	0	0	4	3	**183**	44	139	0
Orange	Warwick Town PD	2012		**248**	**18**	0	3	1	14	**230**	34	190	6
Orange	Washingtonville Vg PD	2008		**85**	**3**	0	0	1	2	**82**	4	77	1
Orange	Washingtonville Vg PD	2009		**116**	**6**	0	0	4	2	**110**	2	106	2
Orange	Washingtonville Vg PD	2010		**82**	**8**	0	1	0	7	**74**	4	67	3
Orange	Washingtonville Vg PD	2011		**81**	**6**	0	1	2	3	**75**	5	69	1
Orange	Washingtonville Vg PD	2012	11	**52**	**1**	0	0	1	0	**51**	4	45	2
Orange	Woodbury Town PD	2008		**386**	**6**	0	2	3	1	**380**	22	352	6
Orange	Woodbury Town PD	2009		**440**	**6**	0	1	3	2	**434**	16	408	10
Orange	Woodbury Town PD	2010		**366**	**3**	0	1	2	0	**363**	8	352	3
Orange	Woodbury Town PD	2011		**301**	**3**	1	0	2	0	**298**	16	270	12

Orange	Woodbury Town PD	2012		**432**	**6**	0	1	4	1	**426**	19	401	6
Orange	County Total	2008		**9,184**	**1,039**	13	69	330	627	**8,145**	1,296	6,522	327
Orange	County Total	2009		**8,766**	**942**	9	46	321	566	**7,824**	1,097	6,464	263
Orange	County Total	2010		**9,077**	**996**	17	51	338	590	**8,081**	1,229	6,613	239
Orange	County Total	2011		**8,971**	**1,007**	9	59	392	547	**7,964**	1,405	6,322	237
Orange	County Total	2012		**9,456**	**1,075**	9	67	373	626	**8,381**	1,344	6,798	239

Saratoga County

					Violent Crime					**Property Crime**			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Saratoga	Ballston Spa Vg PD	2008		**119**	**1**	0	0	0	1	**118**	18	100	0
Saratoga	Ballston Spa Vg PD	2009		**137**	**4**	0	0	0	4	**133**	22	103	8
Saratoga	Ballston Spa Vg PD	2010		**152**	**8**	0	0	2	6	**144**	39	103	2
Saratoga	Ballston Spa Vg PD	2011		**170**	**18**	0	2	1	15	**152**	31	116	5
Saratoga	Ballston Spa Vg PD	2012		**106**	**20**	0	1	2	17	**86**	13	71	2
Saratoga	Mechanicville City PD	2008		**120**	**15**	0	1	4	10	**105**	22	78	5
Saratoga	Mechanicville City PD	2009		**109**	**8**	0	2	3	3	**101**	23	75	3
Saratoga	Mechanicville City PD	2010		**110**	**5**	0	0	2	3	**105**	21	78	6
Saratoga	Mechanicville City PD	2011		**76**	**16**	0	2	5	9	**60**	19	35	6
Saratoga	Mechanicville City PD	2012		**106**	**12**	0	1	1	10	**94**	23	67	4
Saratoga	Saratoga County Park PD	2008		**28**	**4**	0	0	1	3	**24**	2	22	0
Saratoga	Saratoga County Park PD	2009		**45**	**7**	0	0	2	5	**38**	1	37	0
Saratoga	Saratoga County Park PD	2010		**39**	**4**	0	0	2	2	**35**	1	33	1
Saratoga	Saratoga County Park PD	2011		**21**	**2**	0	0	0	2	**19**	0	18	1
Saratoga	Saratoga County Park PD	2012		**14**	**1**	0	0	0	1	**13**	0	13	0
Saratoga	Saratoga County Sheriff	2008		**1,330**	**49**	0	8	6	35	**1,281**	238	1,009	34
Saratoga	Saratoga County Sheriff	2009		**1,254**	**40**	0	5	10	25	**1,214**	209	980	25
Saratoga	Saratoga County Sheriff	2010		**1,339**	**39**	0	6	8	25	**1,300**	254	1,009	37
Saratoga	Saratoga County Sheriff	2011		**1,328**	**21**	1	1	4	15	**1,307**	258	1,030	19

Saratoga	Saratoga County Sheriff	2012		**1,345**	**43**	1	1	3	38	**1,302**	245	1,041	16
Saratoga	Saratoga County State Police	2008		**674**	**64**	0	11	3	50	**610**	114	480	16
Saratoga	Saratoga County State Police	2009		**549**	**75**	1	13	11	50	**474**	98	365	11
Saratoga	Saratoga County State Police	2010		**751**	**52**	0	11	2	39	**699**	97	584	18
Saratoga	Saratoga County State Police	2011		**691**	**51**	1	11	5	34	**640**	83	540	17
Saratoga	Saratoga County State Police	2012		**732**	**42**	1	9	7	25	**690**	108	563	19
Saratoga	Saratoga Springs City PD	2008		**625**	**23**	0	1	6	16	**602**	78	503	21
Saratoga	Saratoga Springs City PD	2009		**601**	**22**	0	1	9	12	**579**	81	485	13
Saratoga	Saratoga Springs City PD	2010		**630**	**31**	0	2	9	20	**599**	92	498	9
Saratoga	Saratoga Springs City PD	2011		**628**	**20**	0	2	3	15	**608**	78	524	6
Saratoga	Saratoga Springs City PD	2012		**724**	**26**	0	5	3	18	**698**	104	584	10
Saratoga	South Glens Falls Vg PD	2008		**148**	**5**	0	2	1	2	**143**	19	122	2
Saratoga	South Glens Falls Vg PD	2009		**114**	**12**	0	1	0	11	**102**	31	70	1
Saratoga	South Glens Falls Vg PD	2010		**93**	**8**	0	2	0	6	**85**	25	60	0
Saratoga	South Glens Falls Vg PD	2011		**88**	**4**	0	0	2	2	**84**	14	67	3
Saratoga	South Glens Falls Vg PD	2012		**98**	**8**	0	1	2	5	**90**	22	65	3
Saratoga	Stillwater Town PD	2008		**28**	**0**	0	0	0	0	**28**	3	23	2
Saratoga	Stillwater Town PD	2009		**22**	**0**	0	0	0	0	**22**	3	19	0
Saratoga	Stillwater Town PD	2010		**27**	**0**	0	0	0	0	**27**	2	25	0
Saratoga	Stillwater Town PD	2011		**17**	**0**	0	0	0	0	**17**	5	12	0
Saratoga	Stillwater Town PD	2012		**36**	**0**	0	0	0	0	**36**	5	30	1
Saratoga	Waterford Town and Vg PD	2008		**68**	**0**	0	0	0	0	**68**	11	55	2
Saratoga	Waterford Town and Vg PD	2009		**92**	**5**	0	2	2	1	**87**	5	80	2
Saratoga	Waterford Town and Vg PD	2010		**95**	**4**	0	1	1	2	**91**	18	67	6
Saratoga	Waterford Town and Vg PD	2011		**56**	**0**	0	0	0	0	**56**	14	41	1
Saratoga	Waterford Town and Vg PD	2012		**78**	**1**	0	0	1	0	**77**	22	55	0
Saratoga	County Total	2008		**3,140**	**161**	0	23	21	117	**2,979**	505	2,392	82
Saratoga	County Total	2009		**2,923**	**173**	1	24	37	111	**2,750**	473	2,214	63
Saratoga	County Total	2010		**3,236**	**151**	0	22	26	103	**3,085**	549	2,457	79

Saratoga	County Total	2011		**3,075**	**132**	2	18	20	92	**2,943**	502	2,383	58
Saratoga	County Total	2012		**3,239**	**153**	2	18	19	114	**3,086**	542	2,489	55

Tioga County					**Violent Crime**					**Property Crime**			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Tioga	Owego Vg PD	2008		**28**	**10**	0	1	0	9	**18**	3	15	0
Tioga	Owego Vg PD	2009		**28**	**3**	0	0	0	3	**25**	8	17	0
Tioga	Owego Vg PD	2010		**102**	**5**	0	0	3	2	**97**	12	83	2
Tioga	Owego Vg PD	2011		**86**	**8**	0	0	2	6	**78**	22	54	2
Tioga	Owego Vg PD	2012		**165**	**5**	0	0	4	1	**160**	33	123	4
Tioga	Tioga County Sheriff	2008		**269**	**15**	0	4	1	10	**254**	60	184	10
Tioga	Tioga County Sheriff	2009		**272**	**11**	0	1	0	10	**261**	57	190	14
Tioga	Tioga County Sheriff	2010		**249**	**13**	0	1	2	10	**236**	63	170	3
Tioga	Tioga County Sheriff	2011		**236**	**13**	0	2	1	10	**223**	70	148	5
Tioga	Tioga County Sheriff	2012		**256**	**17**	0	0	0	17	**239**	64	171	4
Tioga	Tioga County State Police	2008		**149**	**10**	0	4	0	6	**139**	34	100	5
Tioga	Tioga County State Police	2009		**137**	**10**	0	2	0	8	**127**	34	90	3
Tioga	Tioga County State Police	2010		**119**	**15**	0	3	1	11	**104**	30	68	6
Tioga	Tioga County State Police	2011		**147**	**10**	0	2	0	8	**137**	41	90	6
Tioga	Tioga County State Police	2012		**121**	**7**	0	0	1	6	**114**	31	79	4
Tioga	Waverly Vg PD	2008		**134**	**1**	0	0	0	1	**133**	26	103	4
Tioga	Waverly Vg PD	2009		**118**	**6**	0	1	0	5	**112**	23	89	0
Tioga	Waverly Vg PD	2010		**130**	**3**	0	0	0	3	**127**	30	97	0
Tioga	Waverly Vg PD	2011		**122**	**3**	0	1	0	2	**119**	16	98	5
Tioga	Waverly Vg PD	2012		**125**	**6**	0	0	2	4	**119**	23	93	3
Tioga	County Total	2008		**580**	**36**	0	9	1	26	**544**	123	402	19
Tioga	County Total	2009		**555**	**30**	0	4	0	26	**525**	122	386	17
Tioga	County Total	2010		**600**	**36**	0	4	6	26	**564**	135	418	11

Tioga	County Total	2011		**591**	**34**	0	5	3	26	**557**	149	390	18
Tioga	County Total	2012		**667**	**35**	0	0	7	28	**632**	151	466	15

Ulster County					**Violent Crime**					**Property Crime**			
County	PD	Year	Incomplete/ # of Months Rptd	**Index Total**	**Violent Total**	Murder	Forcible Rape	Robbery	Agg. Assault	**Property Total**	Burglary	Larceny	MV Theft
Ulster	Ashokan PCT (NYC-BWSP)	2008		**7**	**2**	0	0	0	2	**5**	0	5	0
Ulster	Ashokan PCT (NYC-BWSP)	2009		**5**	**0**	0	0	0	0	**5**	1	4	0
Ulster	Ashokan PCT (NYC-BWSP)	2010		**5**	**0**	0	0	0	0	**5**	0	5	0
Ulster	Ashokan PCT (NYC-BWSP)	2011		**6**	**0**	0	0	0	0	**6**	0	6	0
Ulster	Ashokan PCT (NYC-BWSP)	2012		**6**	**0**	0	0	0	0	**6**	0	6	0
Ulster	Ellenville Vg PD	2008		**129**	**24**	0	2	1	21	**105**	34	70	1
Ulster	Ellenville Vg PD	2009		**137**	**26**	0	0	2	24	**111**	25	85	1
Ulster	Ellenville Vg PD	2010		**128**	**33**	0	0	4	29	**95**	30	62	3
Ulster	Ellenville Vg PD	2011		**130**	**21**	0	3	5	13	**109**	20	87	2
Ulster	Ellenville Vg PD	2012	11	**138**	**19**	0	3	1	15	**119**	32	87	0
Ulster	Kingston City PD	2008		**714**	**69**	0	5	48	16	**645**	115	510	20
Ulster	Kingston City PD	2009		**759**	**97**	0	2	69	26	**662**	122	510	30
Ulster	Kingston City PD	2010		**692**	**81**	1	5	29	46	**611**	142	451	18
Ulster	Kingston City PD	2011		**673**	**93**	0	8	34	51	**580**	115	450	15
Ulster	Kingston City PD	2012		**842**	**70**	0	4	20	46	**772**	114	648	10
Ulster	Lloyd Town PD	2008		**142**	**10**	0	3	1	6	**132**	21	109	2
Ulster	Lloyd Town PD	2009		**154**	**10**	0	2	3	5	**144**	19	118	7
Ulster	Lloyd Town PD	2010		**126**	**9**	0	2	0	7	**117**	23	92	2
Ulster	Lloyd Town PD	2011		**111**	**0**	0	0	0	0	**111**	23	82	6
Ulster	Lloyd Town PD	2012		**138**	**3**	0	2	0	1	**135**	20	111	4
Ulster	Marlborough Town PD	2008		**118**	**15**	0	1	0	14	**103**	22	78	3
Ulster	Marlborough Town PD	2009		**146**	**9**	0	1	2	6	**137**	27	100	10
Ulster	Marlborough Town PD	2010		**159**	**17**	0	0	0	17	**142**	29	110	3

Ulster	Marlborough Town PD	2011		**164**	**9**	0	0	0	9	**155**	27	122	6
Ulster	Marlborough Town PD	2012		**158**	**3**	0	0	1	2	**155**	40	108	7
Ulster	New Paltz Town and Vg PD	2008		**338**	**47**	0	6	5	36	**291**	63	220	8
Ulster	New Paltz Town and Vg PD	2009		**390**	**62**	0	4	8	50	**328**	44	279	5
Ulster	New Paltz Town and Vg PD	2010		**299**	**55**	0	4	7	44	**244**	41	197	6
Ulster	New Paltz Town and Vg PD	2011		**281**	**33**	0	4	4	25	**248**	29	214	5
Ulster	New Paltz Town and Vg PD	2012		**300**	**32**	1	1	5	25	**268**	51	214	3
Ulster	Olive Town PD	2008	11	**9**	**3**	0	0	0	3	**6**	2	4	0
Ulster	Olive Town PD	2009	8	**8**	**0**	0	0	0	0	**8**	5	3	0
Ulster	Olive Town PD	2010		**7**	**2**	0	0	0	2	**5**	3	2	0
Ulster	Olive Town PD	2011		**3**	**0**	0	0	0	0	**3**	2	1	0
Ulster	Olive Town PD	2012		**1**	**1**	0	0	0	1	**0**	0	0	0
Ulster	Plattekill Town PD	2008		**117**	**15**	0	1	1	13	**102**	32	66	4
Ulster	Plattekill Town PD	2009		**126**	**11**	0	0	1	10	**115**	35	79	1
Ulster	Plattekill Town PD	2010		**137**	**17**	0	0	1	16	**120**	38	77	5
Ulster	Plattekill Town PD	2011		**133**	**7**	0	0	2	5	**126**	54	68	4
Ulster	Plattekill Town PD	2012		**134**	**11**	0	0	0	11	**123**	44	76	3
Ulster	Rosendale Town PD	2008		**45**	**3**	0	0	0	3	**42**	11	29	2
Ulster	Rosendale Town PD	2009		**23**	**1**	0	0	0	1	**22**	3	17	2
Ulster	Rosendale Town PD	2010		**56**	**1**	0	0	0	1	**55**	9	46	0
Ulster	Rosendale Town PD	2011		**61**	**5**	0	0	0	5	**56**	10	44	2
Ulster	Rosendale Town PD	2012		**73**	**2**	0	0	0	2	**71**	17	54	0
Ulster	Saugerties Town PD	2008		**338**	**13**	0	3	1	9	**325**	177	145	3
Ulster	Saugerties Town PD	2009		**194**	**6**	0	0	2	4	**188**	43	136	9
Ulster	Saugerties Town PD	2010		**282**	**4**	0	2	1	1	**278**	71	203	4
Ulster	Saugerties Town PD	2011	*	**396**	**15**	0	2	1	12	**381**	118	252	11
Ulster	Saugerties Town PD	2012		**362**	**14**	0	6	2	6	**348**	72	264	12
Ulster	Saugerties Vg PD	2008		**87**	**4**	0	0	0	4	**83**	9	70	4
Ulster	Saugerties Vg PD	2009		**121**	**7**	0	0	1	6	**114**	18	93	3

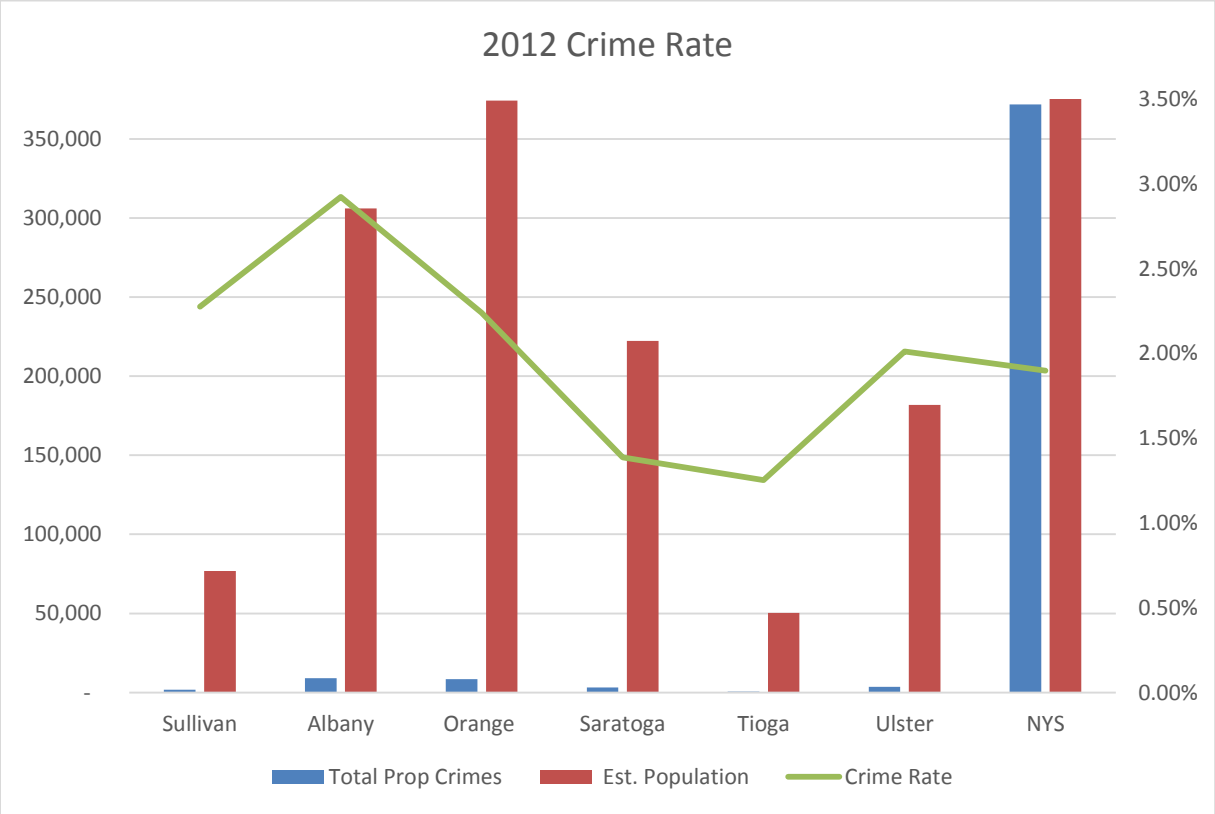
Ulster	Saugerties Vg PD	2010	9*	**53**	**0**	0	0	0	0	**53**	17	35	1
Ulster	Shandaken Town PD	2008		**37**	**3**	0	1	1	1	**34**	11	23	0
Ulster	Shandaken Town PD	2009		**72**	**2**	0	0	0	2	**70**	26	44	0
Ulster	Shandaken Town PD	2010		**106**	**5**	0	0	0	5	**101**	20	78	3
Ulster	Shandaken Town PD	2011		**89**	**2**	0	0	0	2	**87**	32	54	1
Ulster	Shandaken Town PD	2012		**95**	**2**	0	0	0	2	**93**	24	68	1
Ulster	Shawangunk Town PD	2008		**150**	**9**	0	0	2	7	**141**	22	118	1
Ulster	Shawangunk Town PD	2009		**110**	**13**	0	0	0	13	**97**	21	75	1
Ulster	Shawangunk Town PD	2010		**133**	**12**	0	0	0	12	**121**	26	93	2
Ulster	Shawangunk Town PD	2011		**110**	**6**	0	0	0	6	**104**	32	71	1
Ulster	Shawangunk Town PD	2012		**120**	**3**	0	0	0	3	**117**	29	87	1
Ulster	SUNY College At New Paltz	2008		**85**	**0**	0	0	0	0	**85**	11	73	1
Ulster	SUNY College At New Paltz	2009		**109**	**7**	0	1	1	5	**102**	12	90	0
Ulster	SUNY College At New Paltz	2010		**81**	**3**	0	0	1	2	**78**	7	69	2
Ulster	SUNY College At New Paltz	2011		**82**	**3**	0	2	0	1	**79**	7	71	1
Ulster	SUNY College At New Paltz	2012		**67**	**4**	0	1	0	3	**63**	9	54	0
Ulster	Ulster County (RR-CSX)	2008		**1**	**0**	0	0	0	0	**1**	0	1	0
Ulster	Ulster County Park PD	2008		**1**	**0**	0	0	0	0	**1**	0	1	0
Ulster	Ulster County Park PD	2009		**4**	**0**	0	0	0	0	**4**	0	4	0
Ulster	Ulster County Park PD	2010		**2**	**0**	0	0	0	0	**2**	0	2	0
Ulster	Ulster County Park PD	2011		**1**	**0**	0	0	0	0	**1**	1	0	0
Ulster	Ulster County Park PD	2012		**0**	**0**	0	0	0	0	**0**	0	0	0
Ulster	Ulster County Sheriff	2008		**390**	**45**	1	2	3	39	**345**	89	248	8
Ulster	Ulster County Sheriff	2009		**412**	**55**	0	2	4	49	**357**	73	277	7
Ulster	Ulster County Sheriff	2010		**408**	**48**	1	4	5	38	**360**	75	273	12
Ulster	Ulster County Sheriff	2011		**388**	**40**	0	4	5	31	**348**	95	247	6
Ulster	Ulster County Sheriff	2012		**362**	**32**	0	1	2	29	**330**	81	243	6
Ulster	Ulster County State Police	2008		**586**	**185**	4	26	2	153	**401**	148	229	24
Ulster	Ulster County State Police	2009		**589**	**128**	1	14	3	110	**461**	174	265	22

Ulster	Ulster County State Police	2010		**605**	**108**	0	14	6	88	**497**	131	332	34
Ulster	Ulster County State Police	2011		**538**	**76**	1	18	5	52	**462**	128	312	22
Ulster	Ulster County State Police	2012		**585**	**71**	0	13	4	54	**514**	150	337	27
Ulster	Ulster Town PD	2008		**294**	**10**	1	1	6	2	**284**	35	238	11
Ulster	Ulster Town PD	2009		**448**	**8**	0	1	2	5	**440**	37	388	15
Ulster	Ulster Town PD	2010		**490**	**8**	0	0	7	1	**482**	29	443	10
Ulster	Ulster Town PD	2011		**540**	**22**	1	2	7	12	**518**	43	470	5
Ulster	Ulster Town PD	2012		**507**	**10**	0	0	2	8	**497**	30	463	4
Ulster	Woodstock Town PD	2008		**81**	**2**	0	0	0	2	**79**	20	54	5
Ulster	Woodstock Town PD	2009		**91**	**3**	0	0	0	3	**88**	24	60	4
Ulster	Woodstock Town PD	2010		**70**	**5**	0	0	2	3	**65**	16	46	3
Ulster	Woodstock Town PD	2011		**66**	**3**	0	0	2	1	**63**	16	46	1
Ulster	Woodstock Town PD	2012		**49**	**2**	0	0	1	1	**47**	16	31	0
Ulster	County Total	2008		**3,669**	**459**	6	51	71	331	**3,210**	822	2,291	97
Ulster	County Total	2009		**3,898**	**445**	1	27	98	319	**3,453**	709	2,627	117
Ulster	County Total	2010		**3,839**	**408**	2	31	63	312	**3,431**	707	2,616	108
Ulster	County Total	2011		**3,772**	**335**	2	43	65	225	**3,437**	752	2,597	88
Ulster	County Total	2012		**3,937**	**279**	1	31	38	209	**3,658**	729	2,851	78

For purposes of comparison we chose Total Property Crimes.

The crime rate data below divides the Total Property Crimes count from the New York State Division of Criminal Justice Services - Index Crimes Reported: 2008 – 2012, above, by the 2012 Estimated Population from the United States Census State & County QuickFacts.[32]

2012	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**NYS**
Total Property Crimes	1,749	8,950	8,381	3,086	632	3,658	371,880
Est. Population	76,818	306,012	374,135	222,327	50,413	181,753	19,576,125
Crime Rate	2.28%	2.92%	2.24%	1.39%	1.25%	2.01%	1.90%



The National Bureau of Economic Research - Higher Youth Wages Mean Lower Crime Rates

According to a recent study on Market Wages and Youth Crime (NBER Working Paper No. 5983) by NBER Faculty Research Fellow Jeffrey Grogger, there is a strong relationship between wage levels and criminal behavior, which explains why, over the past 20 years, crime rates for young

[32] http://quickfacts.census.gov/qfd/states/36/36111.html

men have increased while their wages have decreased. This also at least partially explains why the crime rate is higher for blacks than whites.

Grogger's main source of data is the 1980 National Longitudinal Survey of Youth (or NLSY), which canvassed youths aged 14 to 21. As he points out, unlike previous and subsequent versions of the NLSY, the 1980 survey was "augmented" to include questions about whether respondents had committed certain types of crimes and "what fraction of their income was derived from crime." In the sample that he uses for this paper, "almost everyone worked, whether they committed crime or not." Still, he concludes that "young men are quite responsive to price incentives": the more money they can make through legitimate means, the less likely they are to commit crimes. Specifically, Grogger estimates that "a ten percent increase in wages would reduce youth participation in crime by roughly 6 to 9 percent." Conversely, he calculates that a 20 percent drop in wages leads to a 12 to 18 percent increase in youth participation in crime.

Grogger goes on to compare this prediction to the actual behavior of wages and crime rates over the past 20 years. On the wage side, he cites reports from the Bureau of Labor Statistics showing that "since the mid-1970s, real wages paid to men 16-24 years old who work full time have fallen 20.3 percent." Hourly wages, "which may provide a better gauge of the labor market opportunities facing young, relatively unskilled men, behaved similarly, falling by 23 percent."

As for crime during this period, Grogger does not have the kind of detailed statistics that would allow him to precisely compare changes in wage levels with changes in income-producing criminal behavior. However, he does cite data from the Federal Bureau of Investigation showing that "between the early 1970s and the late 1980s, arrest rates for 16-to-24-year-old males rose from 44.6 to 52.6 per 1000 population, a gain of 18 percent." Thus the actual behavior of the economy accords closely with Grogger's predictions.

In examining how wage disparities may illuminate racial differences in crime rates, Grogger concludes that "the racial differential in crime rates is in part a labor market phenomenon... Blacks typically earn less than whites and this wage gap explains about one-third of the racial difference in criminal participation rates," he writes.

Finally, Grogger shows that "wages largely explain the tendency of crime to decrease with age." He notes that as people get older, their earning power increases. "The growth in market opportunities with age is largely responsible for the concomitant decrease in crime," Grogger states.

Crime Statistics - Section Conclusion

Property Crime Statistics Rank

Albany County	2.92%
Sullivan County	2.28%
Orange County	2.24%
Ulster County	2.01%
NYS	1.90%
Saratoga County	1.39%
Tioga County	1.25%

Albany County (2.92%) has the highest property crime statistics of the 6 counties in the study next to Sullivan County (2.28%).

Tioga County (1.25%) has the lowest property crime statistics of the 6 counties in the study next to Saratoga County (1.39%). Both are below NYS (1.90%).

There are many studies showing a link between higher wages and lower crime rates (see above NBER example). If a casino were to come to a county with high crime statistics and a high marginal propensity to consume (due to the biggest average rise in income), it is logical to assume a casino might have a real impact on lowering the crime rates of that county and thus lowering county and State crime fighting expenses.

Natural Disasters

USDA Designates 37 Counties in New York as Primary Natural Disaster Areas with Assistance to Producers in Surrounding Areas[33]

WASHINGTON, Oct. 17, 2013 — The U.S. Department of Agriculture (USDA) has designated 37 counties in New York as primary natural disaster areas in three separate designations.

Designation 1
The U.S. Department of Agriculture (USDA) has designated 37 counties in New York as primary natural disaster areas due to damages caused by excessive rain and related flooding, high winds and hail that began May 1, 2013 and continues.

Those counties are:

Albany	Essex	Monroe	Otsego	Seneca
Broome	Franklin	Montgomery	Putnam	Sullivan
Cayuga	Fulton	Oneida	Rensselaer	Ulster
Chenango	Genesee	Ontario	Saratoga	Washington

33 http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=edn&newstype=ednewsrel&type=detail&item=ed_20131017_rel_0177.html

Clinton	Greene	Orange	Schenectady	Wayne
Columbia	Herkimer	Orleans	Schoharie	Westchester
Cortland	Jefferson	Oswego	Schuyler	Wyoming
Dutchess	Madison			

Farmers and ranchers in the following counties in New York also qualify for natural disaster assistance because their counties are contiguous. Those counties are:

Allegany	Delaware	Livingston	St. Lawrence	Tompkins
Bronx	Erie	Niagara	Steuben	Warren
Cattaraugus	Hamilton	Onondaga	Tioga	Yates
Chemung	Lewis	Rockland		

The World Meteorological Organization (WMO) and the United Nations Education and Scientific Cultural Organization (UNESCO) Global Risk Data Platform was reviewed and only one historical (no date) fire near Port Jervis, NY in Orange County and one historical (no date) drought in and around Albany County were found.

Natural Disasters - Section Conclusion

All 6 counties were designated as natural disaster areas due to damages caused by excessive rain and related flooding, high winds and hail that began May 1, 2013.

Factoring natural disasters alone, no remarkable statistics were found to highlight any one county.

Traffic Density

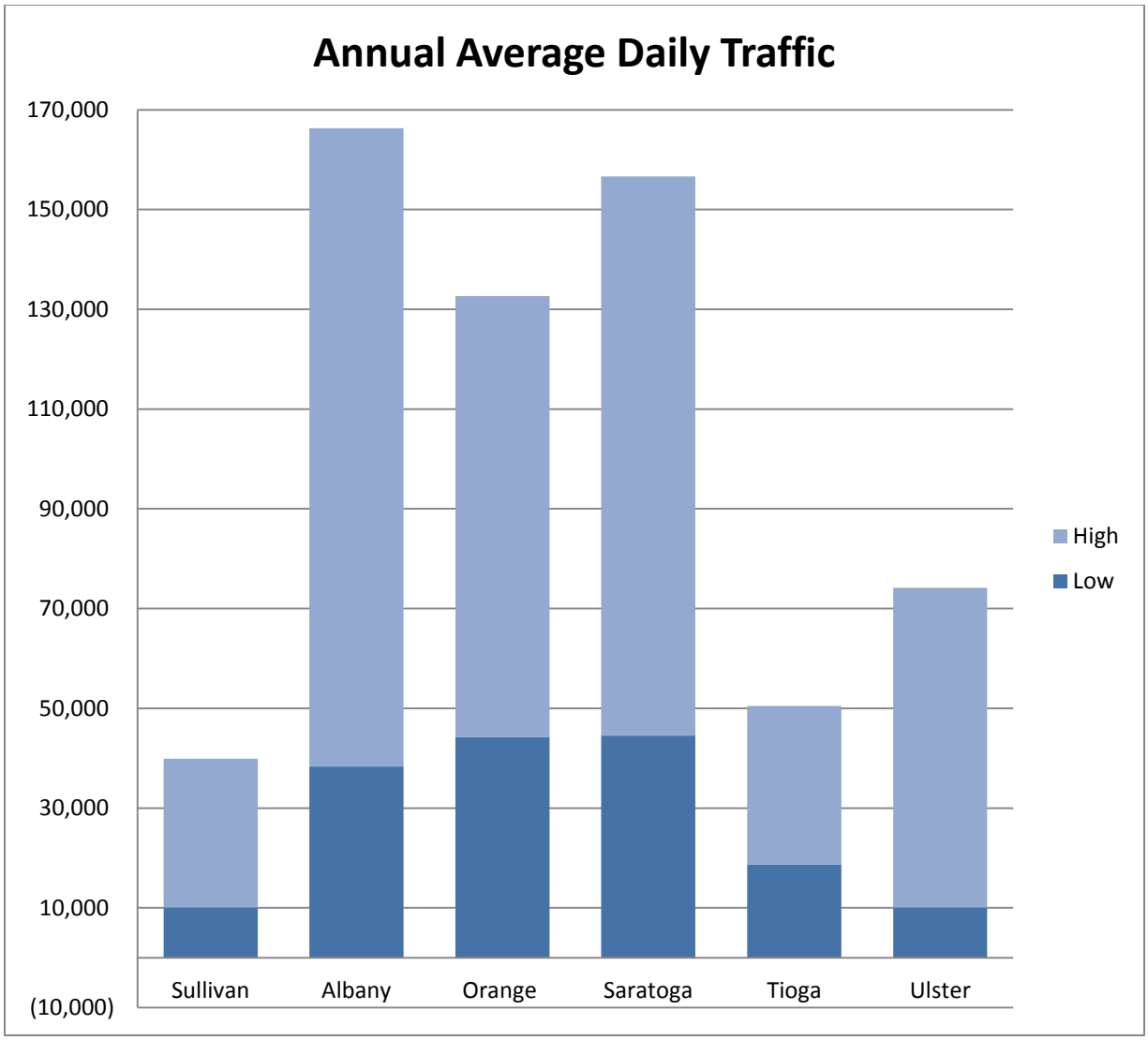
New York State Transportation Traffic Data Viewer[34]

The Traffic Data Viewer (TDV) is an interactive map program that displays published traffic data graphically. On the interactive map, individuals have control of displaying data for individual traffic stations, the type of data available and the location of counters used to collect the data. Estimates of Annual Average Daily Traffic (AADT) are available graphically for segments of roadway that contain a traffic station.

[34] http://gis.dot.ny.gov/tdv/

Estimates of Annual Average Daily Traffic (AADT)

	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster
Low	10,097	38,324	44,218	44,529	18,666	10,097
High	29,782	127,999	88,423	112,122	31,828	64,065



Sullivan County

Sullivan County's major artery, State Route 17, is in the 25001 – 75000 Annual Average Daily Traffic (AADT) range (yellow). It is 29,782 after Bloomingburg and 25,799 just before Monticello. Shortly after Monticello, it drops to the 10001 – 25000 range (purple), 10,097 just before the Western border.

Albany County

Albany County has two major arteries; the NYS Thruway (I87) which is in the 25001 – 75000 AADT range (yellow). It is 44,293 just south of the loop and 38,324 where it exits around Mckownville.

The second major artery, Interstate Route 90 is in the 25001 – 75000 AADT range (yellow) with

69,923 just before it crosses the Hudson River into the county. Just after the river it enters the 75001 - 300000 AADT range (red) peaking at 120,213 near the northern center of the loop and dropping to 116,304 just before turning yellow again outside the loop at 70,630.
It is worth noting that south bound Interstate 87 peaks at 127,999 and south bound Interstate 787 peaks at 91,162 just before hitting the loop. Both are in the 75001 - 300000 AADT range (red).

Orange County

Orange County has two major arteries: The first is the NYS Thruway (I87), which is in the 75001 - 300000 AADT range (red). It is 88,423 in the Tuxedo Park area where it remains until the Harriman toll booth, after which it drops to 45,853 within the 25001 – 75000 range (yellow).

The second major artery is State Route 17, which is in the 25001 – 75000 AADT range (yellow). It's is 44,218 just after the Harriman toll booth. It then increase to 57,017 just before exit 127 Goose Pond area and drops to 51,528 just before Chester and increases again to 61,608 just after Chester. It eventually drops to 32,125 around Bloomingburg with spikes of 61,608 between the Goshen exits and 64,065 between the Middletown exits.

Saratoga County

Saratoga County's main artery is the NYS Thruway (I87) which is in the 75001 - 300000 AADT range (red). It is 112,122 just after the Mohawk River. Traveling south bound it drops to 86,963 near Halfmoon and enters the yellow range at 70,196 where it continues to drop to 44,529 at Glens Falls accept for a spike around Round Lake where it goes back up to 77,252 (red)

Tioga County

Tioga County's major artery State Route 17 is in the 25001 – 75000 AADT range (yellow) when it first enters the county from the East with 31,828. It drops to 18,666 just after Owego (purple range) where it stays till a spike 25,183 (yellow range) at the Western border.

Ulster County

Ulster County has two major arteries: The first is the NYS Thruway (I87) which is in the 25001 – 75000 AADT range (yellow). It is 40,282 at the southern border near Newburgh dropping slowly to 36,203 at the northern border.

The second major artery, State Route 17 doesn't run through the County but along the southern border for approximately 60 miles. It is in the 25001 – 75000 Annual Average Daily Traffic (AADT) range (yellow). Traveling west bound it is 44,218 just after the Harriman toll booth. It then increase to 57,017 just before exit 127 Goose Pond area and drops to 51,528 just before Chester and increases again to 61,608 just after Chester. It eventually drops to 32,125 around Bloomingburg with spikes of 61,608 between the Goshen exits and 64,065 between the

Middletown exits. Continuing west bound it is 29,782 after Bloomingburg and 25,799 just before Monticello. Shortly after Monticello it drops to the 10001 – 25000 range (purple) dropping to 10,097 near the South West corner of the county.

Traffic Density - Section Conclusion

Traffic Density Rank:
Sullivan 10,097 to 29,782
Tioga 18,666 to 31,828
Ulster 10,097 to 64,065
Orange 44,218 to 88,423
Saratoga 44,529 to 112,122
Albany 38,324 to 127,999

Factoring traffic density alone, within the county, Sullivan County is the least dense in all directions. Albany County is the densest.

It is also clear that the NYS Thruway at the Rt. 17 intersection of Orange County and the Albany County loop, especially the northern part including the NYS Thruway between Albany and Saratoga, are already congested areas. Assuming traffic coming from all over the state, these areas will get more congested no matter which county location is chosen for a casino.

Proximity & Distance Willing to Travel

Ontario Problem Gambling Research Centre – Synopsis Project[35]

The objective of the synopsis project is to provide ready access to the gambling research literature for researchers, practitioners, policy makers, government agencies, and our website users.

The OPGRC has undertaken to create one-page synopses of gambling research articles published in peer-reviewed journals. Each synopsis will be one page in length and will contain detail regarding the articles' purposes, methodologies, key results, limitations, and conclusions. Each synopsis will be communicated at a layperson level. These synopses will be posted with a flexible search function allowing research and audiences who do not have a research background to easily access and understand gambling research. The synopses will allow users to quickly determine whether they should read the full published article.

In the first stage of the project, synopses are being completed of gambling research articles that have appeared peer reviewed journals since 2004. The journals include the top tier, high-impact-factor journals, the gambling specialty journals as well as other peer reviewed journals. A list of the journals and a reference list of articles summarized to date is provided in the Synopsis List.

OPGRC staff consulted with several senior problem gambling researchers on the usefulness of the

[35] http://www.gamblingresearch.org/

project and the design and organization of the synopses. Accordingly, the synopses will be organized by topic (e.g., prevention, treatment, screening/evaluation, risk factors, demographics, prevention) on the OPGRC website. Author-derived keywords will also be electronically attached to each synopsis, such that keywords and subject categories can serve as online search prompts. The resource will be user friendly and the Research Officer at OPGRC will manage synopsis enquires.

Once the synopses are posted on the OPGRC website, experienced researchers in the field will be invited to comment on the research studies' potential implications for government agencies, researchers, practitioners, and policy makers. Any commentaries provided by these researchers will be posted with the associated synopsis on the website through an RSS feed. OPGRC website users will also be allowed to insert comments regarding synopses using the RSS feed.

The relationships between residential distance to venue and gambling outcomes.[36]
Author(s) Young, M., Markham, F., & Doran, B.

RESEARCH QUESTION
Do people visit the gambling venue closest to their home? What is the relationship between distance to preferred gambling venue and gambling outcomes (i.e., gambling participation and problem gambling)?

PURPOSE
Researchers have found relationships between proximity and availability of gambling venues and frequency of gambling. However, this research rarely tests the assumption that people actually visit the gambling venue that they live nearest. In addition, other factors, such as non-gambling amenities available are not taken into consideration. A third problem with the existing research on gambling venue proximity is that few hypotheses have been put forth to explain why the relationship between proximity and gambling behavior exists. This study examined which gambling venues people actually visit and how far from home they travel to gamble. This study also investigated the relationship between distance to preferred gambling venue and gambling outcomes including gambling participation and problem gambling.

HYPOTHESIS
None stated.

PARTICIPANTS
Participants were 7,044 respondents to a mail survey in the Northern Territory of Australia. Demographic information was not provided.

PROCEDURE
Participants received a questionnaire package via mail and a reply-paid envelope to return the completed questionnaire. Participants were also given the option of completing the survey online. The questionnaire assessed how frequently participants visited electronic gambling machine venues (including casinos, hotels, and bars) in the past month. Gambling activity, problem

[36] http://www.gamblingresearch.org/synopses/details.php?id=601

gambling severity and demographic variables were also assessed.

MAIN OUTCOME MEASURES
Gambling venue visitation frequency and gambling behavior in the past month were assessed using self-report. Problem gambling severity was assessed using the Problem Gambling Severity Index with scores of 8 or above indicating problem gambling risk.

KEY RESULTS
Only about one third of participants visited the gambling venue located geographically closest to where they lived in the past month. Those who gambled on their last visit to a gambling venue and those with higher problem gambling risk tended to visit the gambling venue closest to their home, compared to those who did not gamble on their last visit or who had lower problem gambling risk. The number of visits per month to the most frequently visited venue decreased as the distance to the venue increased. There was an inverse relationship between gambling participation and distance to most frequently visited venue. In other words, as the distance to gambling venue increased, the likelihood of a participant gambling on their last visit decreased, but this was only found for hotels and clubs, not casinos. There was no relationship between distance travelled to most frequently visited gambling venue and problem gambling.

LIMITATIONS
The researchers assumed that participants travelled to the gambling venue directly from home and did not take into account the complex nature of travel. Future research could consider cognitive distance (i.e., how far away the gambling venue "feels") in addition to physical distance.

CONCLUSIONS
This study found that most people do not actually visit their closest gambling venue most frequently. This finding calls into question other research that assumes a simple relationship between gambling venue proximity and gambling behavior. Additionally, for electronic gambling machine venues, residential proximity is associated with increased visitation of the gambling venue, increase gambling participation increased problem gambling. Non-gamblers tend to visit gambling venues for other reasons such as to socialize or use other amenities and will travel farther than gamblers to do so. On the other hand, gamblers are most interested in electronic gambling machines, which are more widely available, and thus they tend to travel less far to gamble.

U.S. Department of Transportation - Federal Highway Administration
According to the 2001 National Household Travel Survey (NHTS), 2.5 billion vehicle miles of travel (VMT) are for trips over 50 miles from home. The survey intimates (not clearly) that long distance trips without the kids over summer vacation average 212 miles (assuming round trip).[37]

The University of Texas at Austin Department of Civil, Architectural & Environmental Engineering
According to their study - Annual Time Use Model for Domestic Vacation Travel, long-distance travel is usually defined to include trips whose (home-to-home) lengths exceed 100 miles. Leisure travel may be defined as "all journeys that do not fall clearly into the other

[37] http://nhts.ornl.gov/briefs/Vacation%20Travel.pdf

well-established categories of commuting, business, education, escort, and sometimes other personal business and shopping" (Anable, 2002)[38]

[38] http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDIQFjAB&url=http%3A%2F%2Fwww.ce.utexas.edu%2Fprof%2Fbhat%2FABSTRACTS%2FDomestic_Vacation_Travel_pubversion_18Jun08.doc&ei=KV9VU_WwCK_LsQTw5ICwCg&usg=AFQjCNGm9EDNonRbdzzR8Io0o270UzDf6Q&sig2=hAP59Bj7PkycW_6gD3_TVg

Jul 29th, 2:00 PM - 3:00 PM

Trip Characteristics of Casino and Racino Visitors in Oklahoma

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ABSTRACT

Gaming is a revenue driver for many areas, as it is in Oklahoma. This study seeks to provide a comprehensive overview of the characteristics profile and expenditures of Oklahoma casino and racino visitors. This information will be valuable as a resource that can be used by those in tourism planning in Oklahoma to better determine who is coming into their state for gaming purposes and how they might better accommodate them with other tourism driven experiences.

Key words: Gaming, tourism, casino, racino

INTRODUCTION

Gaming destinations not only draw tourists to their facilities but can also be a boon for the economy of the communities where they are located (Long, 1995). Gaming operations are often a fix to economic woes in areas with a slow economy (Raento, 2000) and have transformed many areas that were not previous tourist attractions into destination locations (Eadington, 1999). Casino gaming can now be found in destination resorts, in former mining towns, on riverboats, in urban or suburban settings, and on Indian reservations.

According to the American Gaming Association, the economic value of gambling is measured using the Gross Gambling Revenue (GGR) which is the amount wagered minus the winning returned to players. The GGR figure is used to determine what a casino, racetrack, lottery or the other gaming sales operation generate. In 2006, the GGR in the U.S. totaled $90.93 billion (American Gaming Association, 2007).

Despite a slowing national economy in the last few months of 2007, the expansion of commercial casinos into new jurisdictions, the opening of new properties in existing jurisdictions, the continued revitalization of individual properties across the country and the redevelopment of the gaming industry that was damaged by Hurricane Katrina spurred modest but steady growth in gross gaming revenue (Fahrenkopf, F.J., 2008).

During 2007, 54.5 million U.S. adult populations who visited a casino made a total of 376 million casino trips (American Gaming Association, 2008). Despite the spread of casino across the country, Nevada and New Jersey are still the destination of almost one half of all gambling tourism trips in the United States (Raento, 2000). The annual revenue of casino markets is shown in the Table 1.

Table 1
Top 10 U.S. Casino Markets by Annual Revenue

Casino Location	2007 Annual Revenues
Las Vegas Strip, NV	$6.750 billion
Atlantic City, NJ	$4.921 billion
Chicagoland, IL/IN	$2.602 billion
Connecticut, CT	$1.685 billion
Detroit, MI	$1.335 billion
Tunica/Lula, MS	$1.243 billion
Biloxi, MS	$1.207 billion
St. Louis, MO/IL	$999.37 million
Boulder Strip, NV	$927.70 million
Reno/Sparks, NV	$927.60 million

Source: American Gaming Association (2008)

CHARACTERISTICS OF CASINO TOURISTS

Rosecrance (1986) stated that gambling, as a leisure activity, serves different purposes for individuals including recreation, socialization, exercise of intellectual prowess, or escapism. Those who use gambling as mere entertainment tend to enjoy games of chance where no skill is required (e.g., lottery, tickets, bingo, slot machines). In contrast, gamblers who prefer to be involved in their gambling are more attracted to horse racing, blackjack, poker and bridge where both chance and skill are involved (Walker, 1992).

In a study of vacationer profiles, Morrison, Braunlich, Cai, and O'Leary (1996) focused on 4 types of resorts: casino resort, beach resort, ski resort, and country resort vacationers. They found that casino vacationers were considerably older and had lower incomes than the other three groups. Also, in term of travel planning, casino visitors planned their trips an average of two months in advance, which was the shortest timeframe of all of the groups.

TRIP EXPENDITURES OF CASINO VISITORS

Braunlich (1996) studied casino visitation in Atlantic City, New Jersey in terms of visitor spending and visitation patterns. The findings revealed several reasons that visitors choose Atlantic City including: popularity, casino and night life, affordability, accessibility, first-class hotels and dining, the beach, and the boardwalk. The majority of the visitors to Atlantic City were from New Jersey and neighboring states such as New York, Pennsylvania, and Maryland and the majority of visitors stayed one day or less. The study found that visitors spent 53% of their time gambling and 36% of their time eating, shopping, or walking on the boardwalk (Atlantic City Convention and Visitor Bureau, 1993 cited in Braunlich, 1996).

A study by Spotts and Mahoney (1991) focused on travel expenditures by segmenting travel parties to the light, medium, and heavy spenders based on each party's total expenditures in the destination. The results stated that the heavy spenders were more likely to be a part of larger party sizes, with longer length of stays, have greater involvement with recreation, and have a greater propensity to use information provided by the region's travel industry. Later Moufakkir, Singh, Woud and Holecek (2004) furthered Spotts and Mahoney's (1991) study to extend the profiles to the gaming traveler by conducting a study emphasizing non-gaming related spending trends by casino visitors. The expenditures types included in the study were as follows; 1) lodging, 2) food and beverage inside the casino, 3) food and beverage outside the casino, 4) gasoline purchase, 5) local transportation, and 6) other expenses such as gift and souvenirs. The averages of total non- casino expenditures were $380.35, $36.56, and $15.58 for the heavy, medium, and light spenders respectively. The study reported that the typical heavy spenders were first time visitors whose main trip purpose was either to visit the casino destination or visit friends and relatives. They traveled with a larger party size (2.06 persons), stayed longer (3.17 days), and participated in recreational activities on the trip.

Attaway and Morgan (1997) explored prior gambling experiences in terms of trip characteristics of respondents who reside in Illinois, Missouri, Indiana, Iowa, and Wisconsin. The finding showed that the majority of respondents travel to the casino by automobile with the average distance of 121 miles and the average travel time of more than 60 minutes. On average the respondents stayed in the gaming operation host city for 31.84 hours. The average reported winnings were $284 while the average reported losses were $86. The average non-gaming expenditures were $165. In terms of non-gaming recreation, individuals who traveled with family members or traveled 121 miles or more, spent significantly more on other entertainment activities (amusement parks, shopping, museums, sport events) compared to individuals traveling alone or who traveled less than 121 miles.

GAMING IN OKLAHOMA

The gaming industry in Oklahoma has grown explosively with revenues nearly doubling to $2 billion during since 2005. Oklahoma now ranks first in the nation in the number of tribal casinos (100), second in gaming machines (41,771), and fourth in revenue ($1.97 billion). Oklahoma has the highest market penetration rate of any of the leading tribal gaming states with one slot machine for every 65 adults in the state (Grogan, 2008).

In spite of this enormous growth, there is relatively little documented research conducted to determine the profile of the casino and racino visitors in Oklahoma. It is essential to acquire this knowledge in its broadest and most basic terms if one wishes to investigate higher order issues that may have greater policy implications. Therefore, the purpose of this study was to determine the travel behavior including trip characteristics and expenditures of casino visitors in Oklahoma to better determine who is coming into their state for gaming purposes and how they might better accommodate them with other tourism driven experiences.

METHOD

To determine the characteristics and spending patterns of Oklahoma gaming visitors, the approach of this study was to utilize previously published research questionnaires related to casino visitation, and to supplement the previous information with additional information from experts in the casino, racing, leisure, and recreation fields. From this information a comprehensive 87-item survey was developed that solicited data in three major areas: respondent demographics, trip characteristics and opinions, as well as trip expenditures. A full service marketing company was then recruited for collection of data using an online panel. A large pre-recruited, managed, online consumer panel with over one million members was utilized to collect the data from May 25th through June 10th 2008. A series of screening questions were used to ensure that the potential respondents from the panel were qualified to participate in the survey. Once qualified, the panel members were allowed access to the online, self-administered survey.

RESULTS

A total of 590 usable responses were returned from the survey. The margin of error for the questions was +/- 2.3% with a 95% confidence interval. Some of the data does not add up to 100% due to rounding or because respondents were allowed more than one choice for the questions. Of those surveyed 52% were females and 48% were males, with a mean age of about 44 years. The majority (89%) of the respondents thought of themselves as being Non-Hispanic Whites and two-thirds of the respondents were married. The median household income was $46,225. Approximately 52% of the respondents reported being residents of Oklahoma, the remaining almost equally from the four neighboring states.

A majority of the visitors (56.6%) were couples with no children, with the majority (72.4%) of the respondents agreeing that they would visit Oklahoma for tourism purposes even if no gaming facilities were available. However 63.1% of the respondents did not engage in any other activity other than gambling. The three most popular activities engaged in include: shopping (15.2%), visiting relatives and friends (12.2%), and entertainment activities (7.6%). Slot machines were by far the predominate choice in gaming (91.6%).

Only 32.8% of the respondents agreed that they visited Oklahoma solely because gaming was not available in their own state. On the other hand, an overwhelming majority (72.4%) of the respondents agreed that they would visit the state for tourism purposes even if no gaming facilities were available.

Visitors made on average 2.67 trips exclusively to casinos and racinos in Oklahoma with an overwhelming number of visitors (81.6%) making day trips with no overnight stays. Only 8.6% of the respondents stayed one night and another 6.5% of the visitors stayed two nights. Less than 3.2 % of the respondents stayed more than two nights. Almost all (95.9%) of all respondents used their personal car, truck, or van to visit the casinos and racinos in Oklahoma. Only about 1.6% of the visitors had used a charter or tour bus. Less than 1% of the respondents arrived by plane.

About 42% of the respondents had traveled less than 25 miles to visit their casino or racino destination. About 61% had traveled less than 50 miles, and about 75% had traveled less than 100 miles to visit their destinations. The weighted average of the miles driven by the respondents was 55.37 miles.

In terms of determining whether to visit a particular casino or racino, word-of-mouth (my friend/family told me; 39.1%), and past experience or visit (28.3%) were the two most popular sources cited by the respondents. The third most popular item cited was, "I live in the neighborhood" with 24.1%. Among the hard

information sources, billboard signs (19%) and signage (happen to drive by, 14.1%) were the most popular sources cited.

The majority of the visitors (56.6%) are couples with no children. The next most popular group types are 'three or more adults with no children,' (23.6%) and 'one adult without children,' (16.7%). Table 2 shows the trip characteristics of the typical casino or racino visitors to Oklahoma.

Table 2
Trip Characteristics Profile

Average number of trips taken during past twelve months to Oklahoma exclusively for visiting casinos or racinos.	2.67 Trips
Other most popular casino destinations visited	Las Vegas, Tunica/Lula, and Kansas City
Number of nights stayed on visit	82% None; 9% one night
Transportation used	Own car, truck or van
Average distance traveled from home	55.37 miles
Information sources used most often	Word-of-mouth from friends and family
Accommodation used	None, 83%; 7.4% other hotel
Type of party visiting	Couple with no children under 18
Other activities engaged in	None, 63.1%; Shopping, 15.2%

Table 3 summarizes the overall average trip expenditures incurred by the visitors during a trip. The incurred expenditures are for all travel members and for the entire duration of the trip. The fact that most of the respondents are on day trip may imply that a significant amount of the expenditures are spent on one day.

The expenditure categories were identified using previous research and after consulting with industry experts. The same categories were used throughout this research project for maintaining consistency and to more easily compare the results among the variables and their categories.

The results show that the visitors on an average spent $740.17 per trip on all trip-related expenditures. Typically, the visitors spent $180.88 on betting and wagering (24.3%), $144.64 (19.5%) on accommodation, and $103.66 (14.0%) on entertainment. Understandably, transportation, fuel, and tolls cost an additional $87.24 (11.7%). The visitors spend $62.21 (8.4%) on food at restaurants and groceries. Other minor expenses such as souvenirs, non-food items, and miscellaneous items account for the rest of the trip expenses.

Table 3
Overall Trip Expenditure of Respondents by Category

Please indicate the dollar amount spent for all travel party members and for the entire duration of your LAST casino/racino visit in Oklahoma for each of the following expenditures categories:	Average Trip Expenditures in Dollars	Standard Deviation
Betting Wagering		
Dollar amount spent on casino/racino betting and wagering:	$ 180.88	$ 66.21
Accommodation Expense		
Dollar amount spent on all types of accommodations (hotels, motels, and other types of lodging):	$ 144.64	$ 15.21
Transportation Expense		
Dollar amount spent on all types of transportation	$ 49.72	$ 48.58
Fuel Expense		
Dollar amount on gas/fuel for all vehicles used:	$ 30.25	$ 27.47
Tolls Expense		
Dollar amount spent on parkway or highway toll charges:	$ 7.17	$ 6.89
F & B Expense		
Dollar amount spent on food and beverage at restaurants and foodservice outlets of all types:	$ 34.00	$ 28.22
Groceries Expense		
Dollar amount spent on groceries:	$ 28.21	$ 19.76
Souvenir Expense		
Dollar amount spent on souvenirs:	$ 47.00	$ 38.66
Other Non-Food Expense		
Dollar amount spent on other non-food merchandise (clothes, medicines, other retail items, etc.):	$ 53.59	$ 45.52
Entertainment Expense		
Dollar amount spent on entertainment and registration fees (event tickets, conference fees, etc.):	$ 103.66	$ 86.52
Miscellaneous Expense		

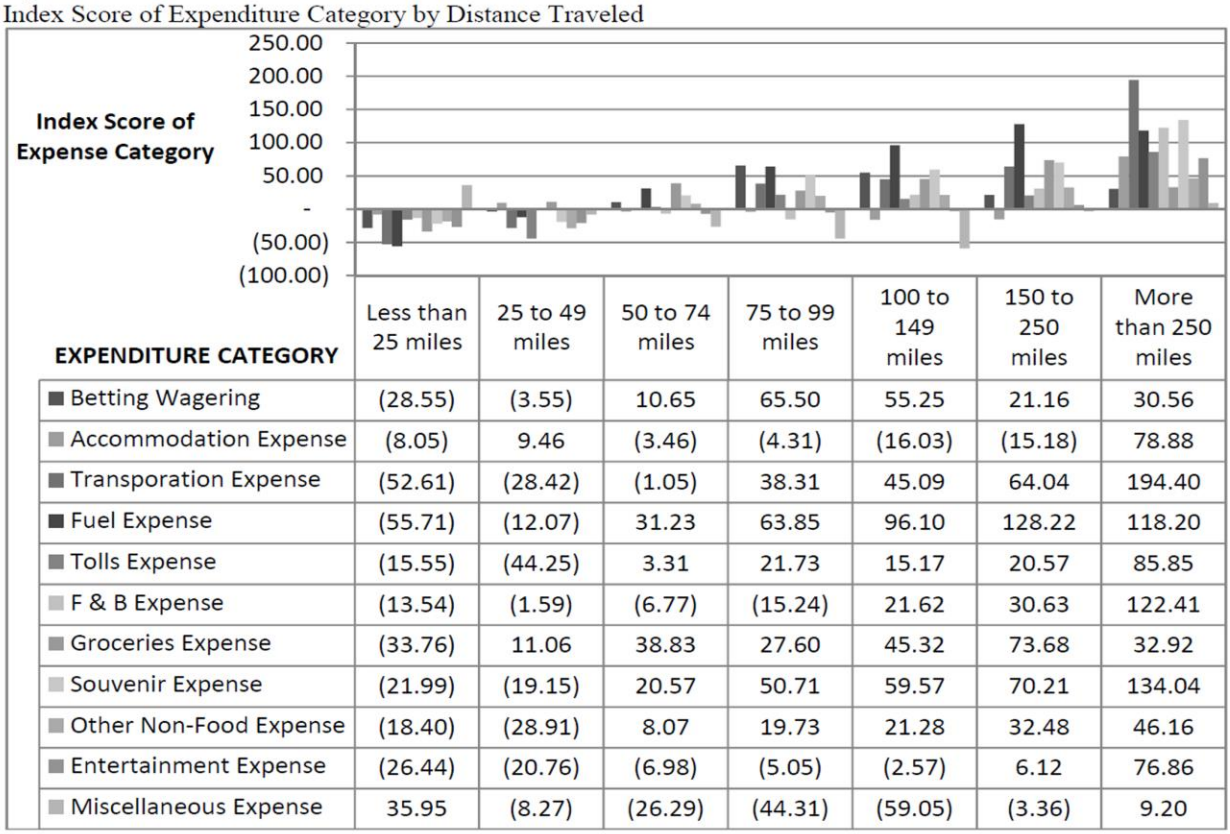
Dollar amount spent on other miscellaneous expenses (auto repair, etc.):	$ 61.05	$ 67.30
TOTAL:	**$ 740.17**	**$ 40.94**

As it may follow logically, the total trip expenditures increase with increasing distance travelled by the visitor. The total trip index scores have been calculated by comparing the total trip expenditures for each category with the average total trip expenditures shown in the last column of Table 3. The index score for each category indicates by how much more or less than the average expenditures each category is.

Figure 1 presents an extension of the index scores where the expenditures for each category of expenses are compared with the mean for that category. A negative score means that the visitors in the specific category spend less than the average for all visitors for that category of expense. For example, in Figure 1, visitors travelling 'less that 25 miles' have a betting and wagering index score of -28.55. This means that compared to all visitors, visitors who travel 'less than 25 miles' spend 28.55% less than the average betting and wagering expenditures for all visitors. Similarly, the index score for visitors that travel 'more than 250 miles' is 30.56 for betting and wagering. This means that visitors who come from 'more than 250 miles' to the casinos and racinos, on an average, spend 30.56% more in betting and wagering compared to all visitors.

Using the above described method, one can identify the trends in expenditures by category of visitor. Figure 1, reveals the following trends: expenditures in all categories are increasing with increase in distance travelled except of miscellaneous and accommodation expenses, and visitors from further away tend to bet and wager more than visitors living in the neighborhood.

Figure 1
Index Score of Expenditure Category by Distance Traveled



EXPENDITURE CATEGORY	Less than 25 miles	25 to 49 miles	50 to 74 miles	75 to 99 miles	100 to 149 miles	150 to 250 miles	More than 250 miles
Betting Wagering	(28.55)	(3.55)	10.65	65.50	55.25	21.16	30.56
Accommodation Expense	(8.05)	9.46	(3.46)	(4.31)	(16.03)	(15.18)	78.88
Transporation Expense	(52.61)	(28.42)	(1.05)	38.31	45.09	64.04	194.40
Fuel Expense	(55.71)	(12.07)	31.23	63.85	96.10	128.22	118.20
Tolls Expense	(15.55)	(44.25)	3.31	21.73	15.17	20.57	85.85
F & B Expense	(13.54)	(1.59)	(6.77)	(15.24)	21.62	30.63	122.41
Groceries Expense	(33.76)	11.06	38.83	27.60	45.32	73.68	32.92
Souvenir Expense	(21.99)	(19.15)	20.57	50.71	59.57	70.21	134.04
Other Non-Food Expense	(18.40)	(28.91)	8.07	19.73	21.28	32.48	46.16
Entertainment Expense	(26.44)	(20.76)	(6.98)	(5.05)	(2.57)	6.12	76.86
Miscellaneous Expense	35.95	(8.27)	(26.29)	(44.31)	(59.05)	(3.36)	9.20

The visitors experience greater amounts of expenditures in all expense categories with increase in the number of nights stayed. However, the expense categories increase at different rates. Day trip visitors' expenditures are lower than average in all categories of expenses. Visitors who come only for a day trip spend an average of $581.06 while visitors staying for more than 5 nights spend $1,993.00 per visit. The greatest increase in expenditure categories in terms of nights stayed seems to be for F&B expenditures which increased to 276.44% greater than the average for all visitors when the visitors stay for five or more nights. Transportation expense and accommodation expense also show similar increases of 243.96% and 242.21% respectively.

Visitors who stay in the casino hotels at the destination, other hotels at the destination, or at rented cabins or homes bet and wager about 60% higher than the average for all visitors. On average, visitors that are on day trip or stay with relatives and friends, wager about 6% less than the average for all visitors. Visitors who stay in the casino hotels at the destination, or at rented cabins or homes expend about 35% more on entertainment than the average for all visitors. Visitors staying in rented cabins or homes spend about 271% more on food and beverage expenditures compared to the average for all visitors in that category.

Visitors who use personal motorcycles or bikes incur less expenditures in all categories expect for betting and wagering for which they spend 34.53% higher than the average for all visitors. Visitors arriving by commercial plane incur about 14.96% higher accommodation expenses than the average for all visitors. Visitors arriving by personal cars, bikes, or charter or tour buses all incur lower than average expenditures for accommodation. This may be because most of such visitors are on day trips. Visitors arriving by commercial airline also incur much higher expenditures on F&B (267.62%), souvenirs (155.32%), and entertainment (131.52%) compared to the average for all visitors.

DISCUSSION AND CONCLUSION

As indicated earlier, it is the intent of this research to be a starting point and to fill a research gap. This study is primary research only for the descriptive purpose of determining the characteristics profile of Oklahoma's casino and racino visitor. In that regard, no attempt was made to draw any conclusions or recommendations for marketing or strategic purposes. However, further investigation could benefit individual gaming facilities, other tourism related businesses and the state as a whole. By knowing the characteristics of the casino visitors, their travel patterns and expenditure practices tourism planning strategies can be adjusted to include this type of visitor who already is a vital part of tourism in the state.

REFERENCES

American Gaming Association. (2007). *Gaming Revenue: Current-Year Data.* Retrieved December 11, 2008 from http://www.americangaming.org/Industry/factsheets/ statistics_detail.cfv?id=7

American Gaming Association. (2008). *AGA Survey of Casino Entertainment.* Retrieved December 11, 2008 from http://www.americangaming.org/assets/ files/ aga_2008_sos.pdf

American Gaming Association. (2008). *Top 20 U.S. Casino Markets by Annual Revenue.* Retrieved December 11, 2008 from http://www/americangaming.org/Industry/ factsheets/statistics_detail.cfv?id=4

Attaway, J. S. & Morgan A. J. (1997). Exploring the Impact of Gambling Venues on Local Retail Expenditures. *Journal of Shopping Center Research*, 4(2), 7 – 25.

Braunlich, C. G. (1996). Lessons from the Atlantic City Casino Experience. *Journal of Trave Research,* 34(1), 46 – 56.

Brown, D. O. (2001). A Sociodemographic and Trip Profile of Kentucky Visitors Based on Their Gaming Activity and Destination-specific Behavior. *Journal of Vacation Marketing,* 7(1), 41 – 49.

Eadington, W. R. (1999). The Economics of Casino Gambling. *Journal of Economic Perspectives,* 13(3), 173 – 192.

Fahrenkopf, F.J. (2008). *State of States 2008: The AGA Survey of Casino Entertainment.* Washington, D.C.: American Gaming Association.

Grogan, T. (2008). Winners and Losers: The Maturing Oklahoma Casino Market. *Indian Gaming, 18* (2), 46-47.

Hinch, T. & Walker, G, (2003). *Casino Patrons, Travel Behavior, Place Attachment, and Motivations: A Study of Alberta Residents.* , University of Alberta, Faculty of Physical Education and Recreation.

Long, P. T. (1995). Casino Gaming in the United States: 1994 Status and Implications. *Tourism Management*, 16(3), 189 -197.

Morrison, A. M., Braunlich, C. G., Cai, L. A. & O'Leary, J. T. (1996). A Profile of the Casino Resort Vacationer. *Journal of Travel Research*, *35*(2), 55 – 61.

Moufakkir, O., Singh, A. J., Wood, A. M., & Holecek, D. F. (2004). Impact of Light, Medium and Heavy Spenders on Casino Destinations: Segmenting Gaming Visitors Based on Amount of Non-gaming Expenditures. *UNLV Gaming Research & Review Journal,* 8(1), 59 – 71.

Raento, P. (2000). Casino Gaming in the United States: Issues, Concerns, and Recent Research. *American Studies in Scandinavia*, 32, 45 – 62.

Rosecrance, J. (1986). The Sociology of Casino Gamblers. *Nevada Public Affairs Review*, 2, 27 – 31.

Spotts, D. M. & Mahoney, E. M. (1991). Segmenting Visitors to a Destination Region Based on the Volume of their Expenditures. *Journal of Travel Research*, 29(4), 24 – 31.

Walker, M. B. (1992). *The Psychology of Gambling*, Oxford: Pergamon Press.

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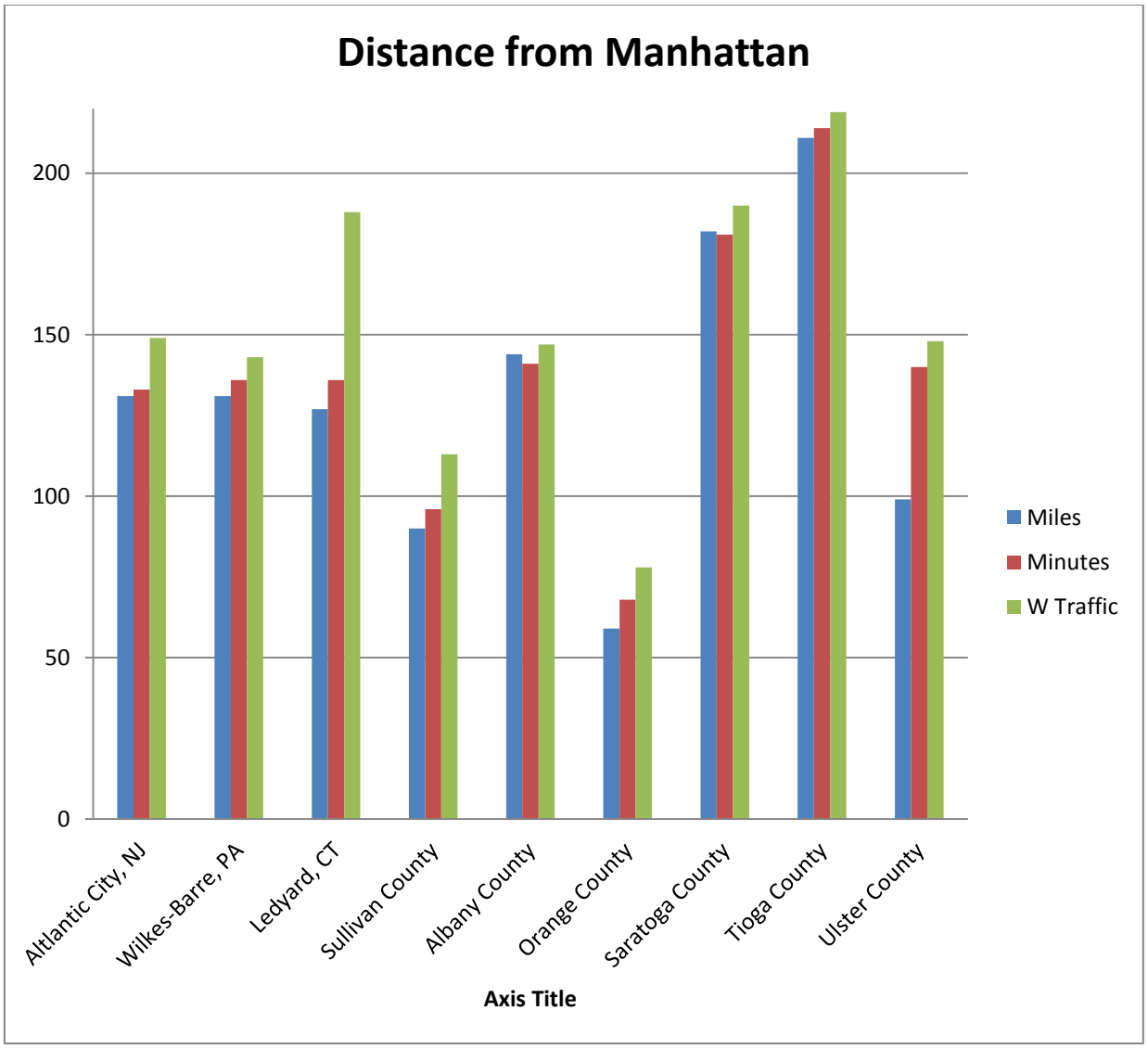
Data taken from Google Maps at 3:15PM on Thursday April, 17, 2014. When the term "county" is used, Google maps the center of the county which is often but not always the county seat. Atlantic City, NJ is home to many casinos including the Tropicana, Wyndham, and Golden Nugget[39]; Wilkes-Barre, PA is home to Mohegan Sun at Pocono Downs[40]; and Ledyard is home to Foxwoods[41].

Start	Finish	Miles	Minutes	W Traffic
Manhattan	Atlantic City, NJ	131	133	149
Manhattan	Wilkes-Barre, PA	131	136	143
Manhattan	Ledyard, CT	127	136	188
Manhattan	Sullivan County	90	96	113
Manhattan	Albany County	144	141	147
Manhattan	Orange County	59	68	78
Manhattan	Saratoga County	182	181	190
Manhattan	Tioga County	211	214	219
Manhattan	Ulster County	99	140	148

39 http://www.atlanticcitynj.com/?utm_source=google&utm_source=google&utm_medium=cpc&utm_term=atlantic%20city&utm_campaign=Atlantic%20City_Only

40 http://moheganssunpocono.com/

41 http://www.foxwoods.com/default.aspx



Proximity & Distance Willing to Travel - Section Conclusion

Distance Rank	
Orange County	59
Sullivan County	90
Ulster County	99
Ledyard, CT	127
Atlantic City, NJ	131
Wilkes-Barre, PA	131
Albany County	144
Saratoga County	182
Tioga County	211

Time with Traffic Rank

Orange County	78
Sullivan County	113
Wilkes-Barre, PA	143
Albany County	147
Ulster County	148
Atlantic City, NJ	149
Ledyard, CT	188
Saratoga County	190
Tioga County	219

The Ontario Problem Gambling Research Centre study states "…that most people do not actually visit their closest gambling venue most frequently." Multiple other studies point to vacation and gambling trips averaging over 50 but under 100 miles (one way).

Factoring proximity & distance willing to travel alone, it appears Sullivan County and Ulster County are between the averages and not the closest to Manhattan (our fixed variable source).

Distance from Existing Casinos

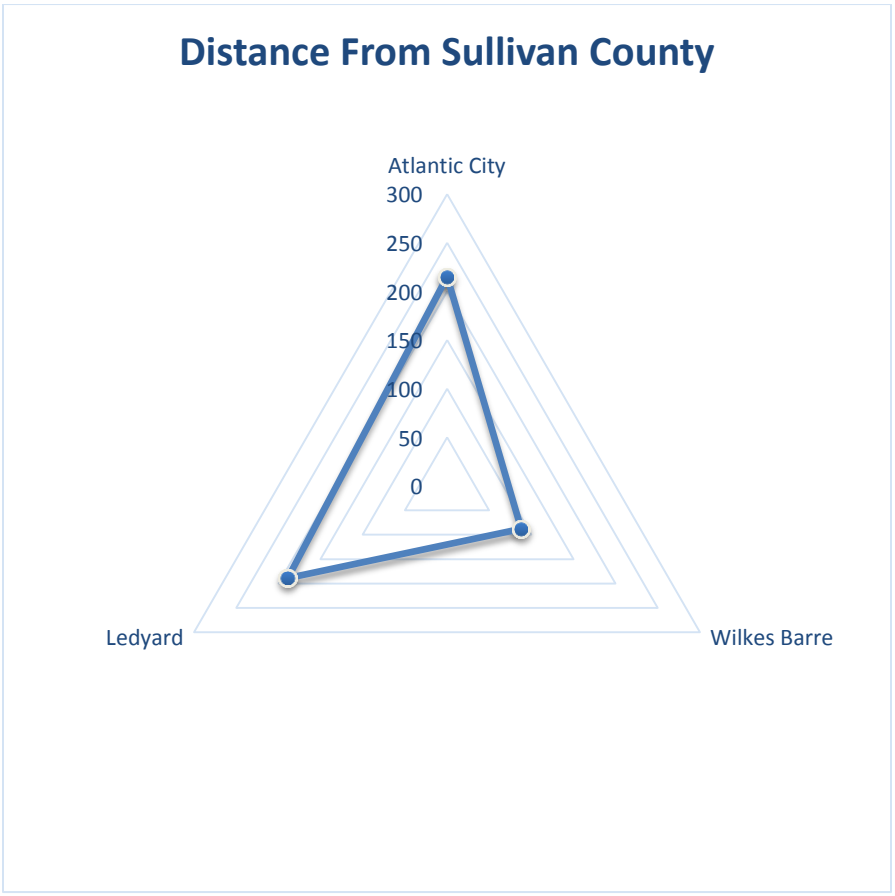
This section of the study, like the rest, focuses on the benefit to the state vs. feasibility of a particular casino. That said, the state would benefit most by a New York casino being close to and potentially taking market share away from one or more of the 3 existing casinos' locations in other states: Atlantic City, NJ; Wilkes-Barre, PA; and/or Ledyard, CT.

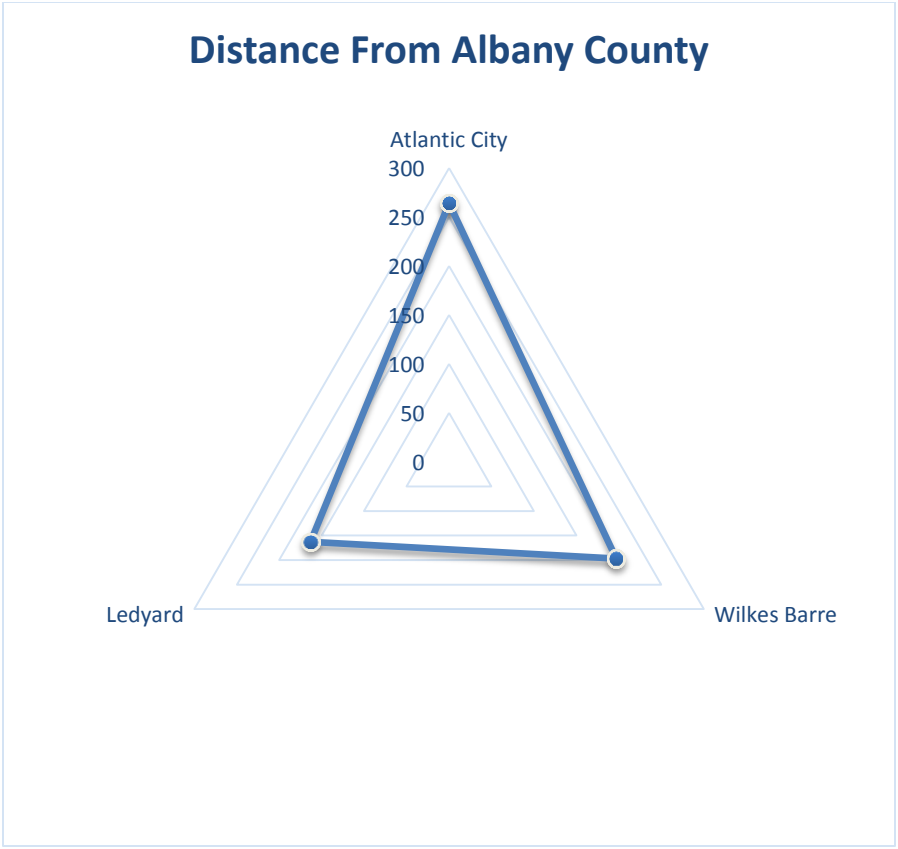
The data and charts below show the distance in miles between a chosen county and the 3 major casinos in the tri-state area.

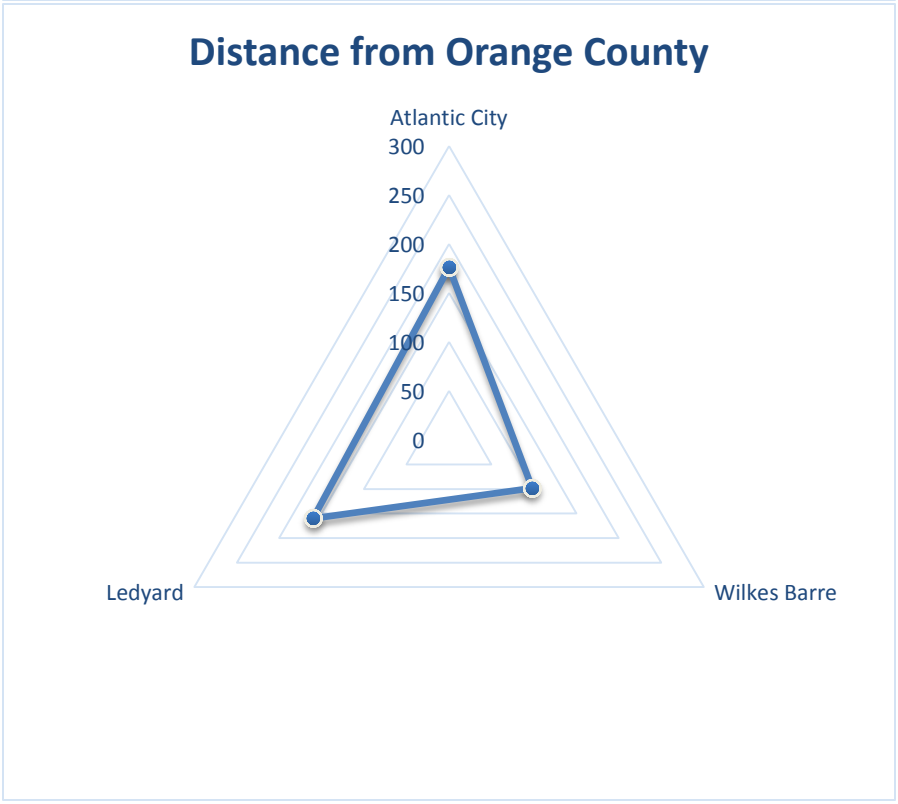
To interpret the radar charts… the closer each corner of the triangle to the center, the better. Having a tiny perfectly shaped triangle would indicate all 3 competitors being equally very close to the chosen county. However, a misshapen triangle with 2 corners extremely close to center would beat a perfect triangle with all 3 corners only being somewhat close to the center. The reader may find it easier to simply review the ranks below the radar charts.

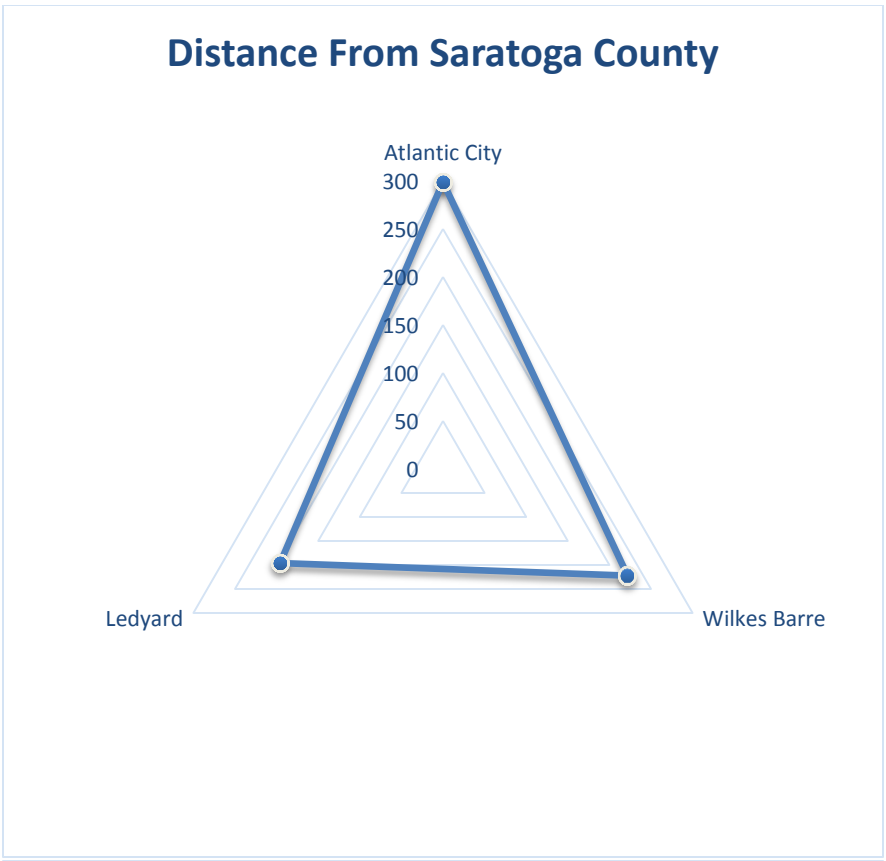
Distance Between	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	Atlantic City	Wilkes Barre	Ledyard
Sullivan	0	109	40	147	120	44	215	88	189
Albany	109	0	111	39	166	73	264	197	163
Orange	40	111	0	146	153	49	176	98	160
Saratoga	147	39	146	0	171	109	299	222	196
Tioga	120	166	153	171	0	145	271	108	302
Ulster	44	73	49	109	145	0	218	123	178
Atlantic City	215	264	176	299	271	218	0	174	259
Wilkes Barre	88	197	98	222	108	123	174	0	249
Ledyard	189	163	160	196	302	178	259	249	0

Distance Between	Atlantic City	Wilkes Barre	Ledyard	Total
Tioga	271	108	302	681
Saratoga	299	222	196	717
Sullivan	215	88	189	492
Ulster	218	123	178	519
Albany	264	197	163	624
Orange	176	98	160	434




Distance From Albany County
Atlantic City
300
250
200
150
100
50
0
Ledyard
Wilkes Barre


Distance from Orange County
Atlantic City
300
250
200
150
100
50
0
Ledyard
Wilkes Barre


Distance From Saratoga County
Atlantic City
300
250
200
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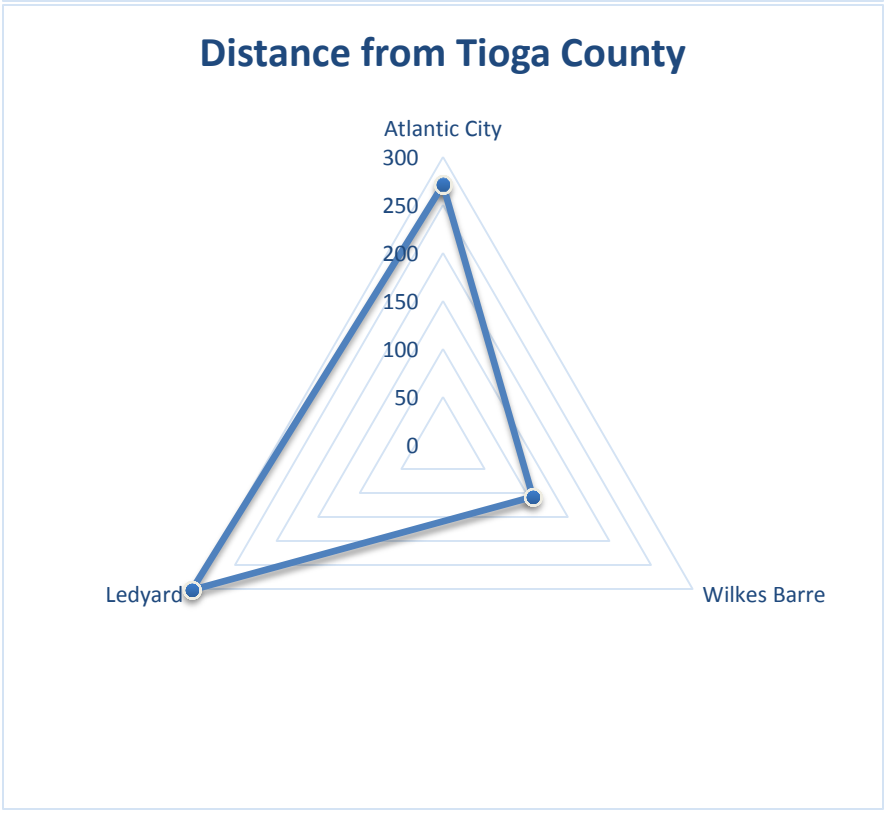
Ledyard
Wilkes Barre


Distance from Tioga County
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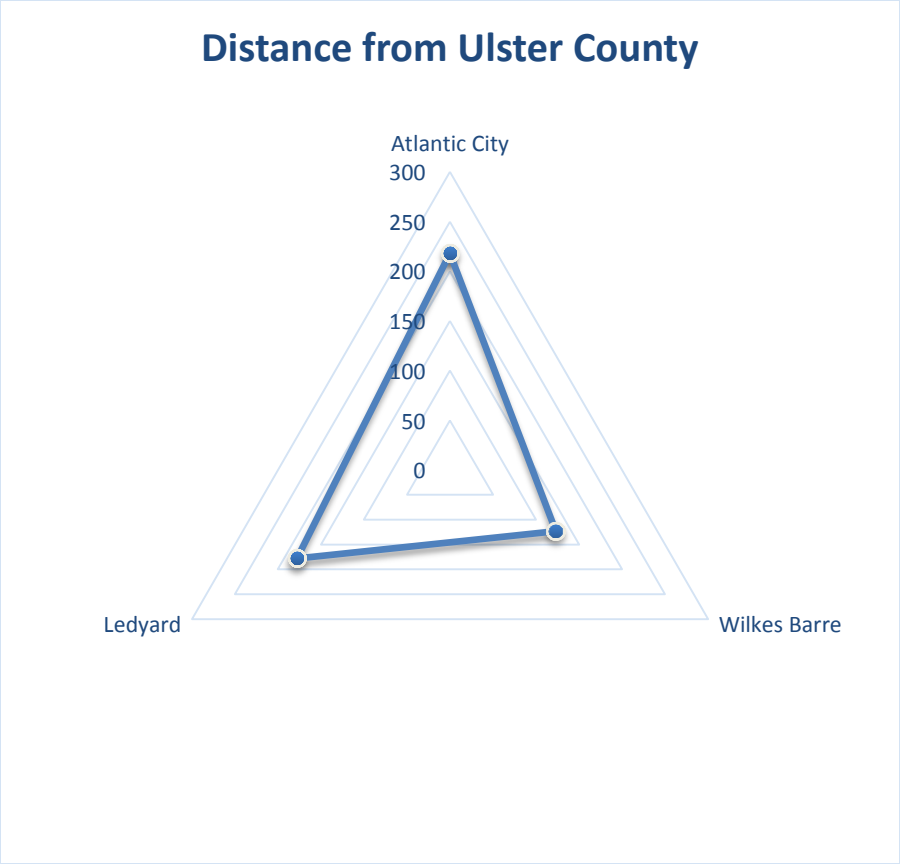
Ledyard
Wilkes Barre



Distance from Existing Casinos - Section Conclusion

Distance from Atlantic City Rank
Orange 176
Sullivan 215
Ulster 218
Albany 264
Tioga 271
Saratoga 299

Distance from Wilkes-Barre Rank
Sullivan 88
Orange 98
Tioga 108
Ulster 123
Albany 197
Saratoga 222

Distance from Ledyard Rank
Orange 160
Albany 163
Ulster 178
Sullivan 189
Saratoga196
Tioga 302

Total Distance Rank
Orange 434
Sullivan 492
Ulster 519
Albany 624
Tioga 681
Saratoga 717

Orange is closest to Atlantic City, Ledyard, and overall, and is 2nd closest to Wilkes-Barre.

Sullivan County is closest to Wilkes-Barre, 2nd closest to Atlantic City and overall, and is 4th closest to Ledyard.

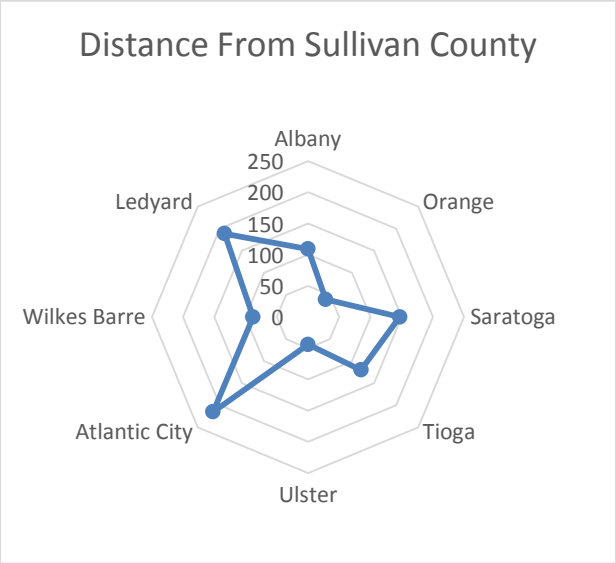
Factoring distance between existing casinos alone, the state would benefit most from a casino in Orange County as it is closest to the 3 biggest competitors and could potentially pull money from NJ, CT, and PA into New York.

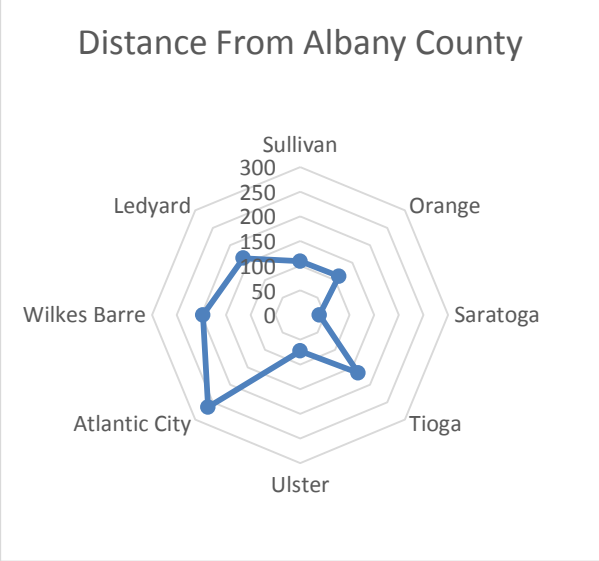
Distance between Existing Casinos and Proposed Counties

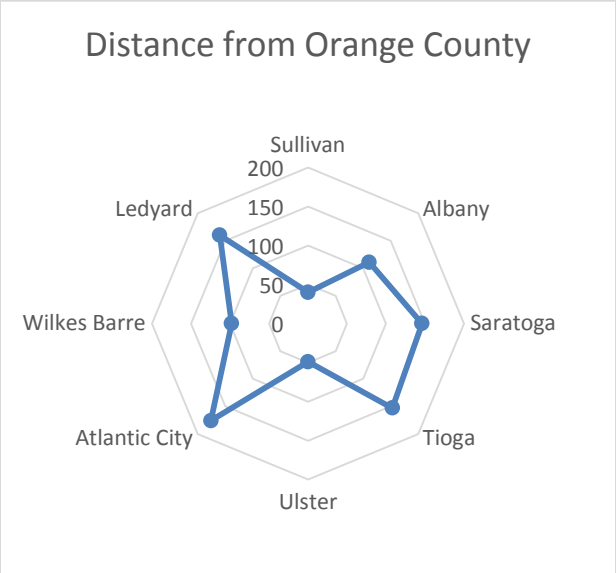
The data and charts below show the distance in miles between a chosen county and the other 5 counties and the 3 major casinos in the tri-state area.

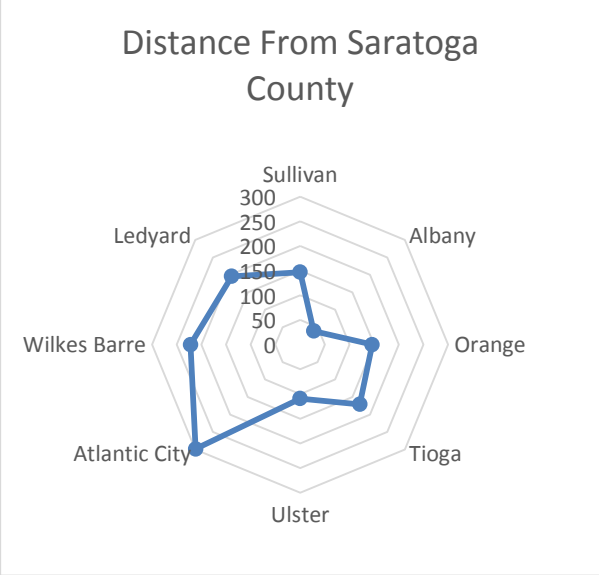
Distance Between	**Sullivan**	**Albany**	**Orange**	**Saratoga**	**Tioga**	**Ulster**	**Atlantic City**	**Wilkes Barre**	**Ledyard**
Sullivan	0	109	40	147	120	44	215	88	189
Albany	109	0	111	39	166	73	264	197	163
Orange	40	111	0	146	153	49	176	98	160
Saratoga	147	39	146	0	171	109	299	222	196
Tioga	120	166	153	171	0	145	271	108	302
Ulster	44	73	49	109	145	0	218	123	178
Atlantic City	215	264	176	299	271	218	0	174	259
Wilkes Barre	88	197	98	222	108	123	174	0	249
Ledyard	189	163	160	196	302	178	259	249	0

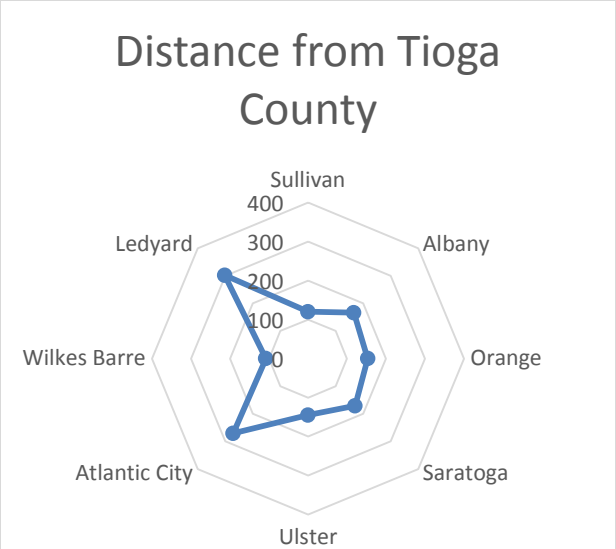
Distance Between	Sullivan	Albany	Orange	Saratoga	Tioga	Ulster	Atlantic City	Wilkes Barre	Ledyard
Sullivan	0	109	40	147	120	44	215	88	189
Albany	109	0	111	39	166	73	264	197	163
Orange	40	111	0	146	153	49	176	98	160
Saratoga	147	39	146	0	171	109	299	222	196
Tioga	120	166	153	171	0	145	271	108	302
Ulster	44	73	49	109	145	0	218	123	178
Atlantic City	215	264	176	299	271	218	0	174	259
Wilkes Barre	88	197	98	222	108	123	174	0	249
Ledyard	189	163	160	196	302	178	259	249	0

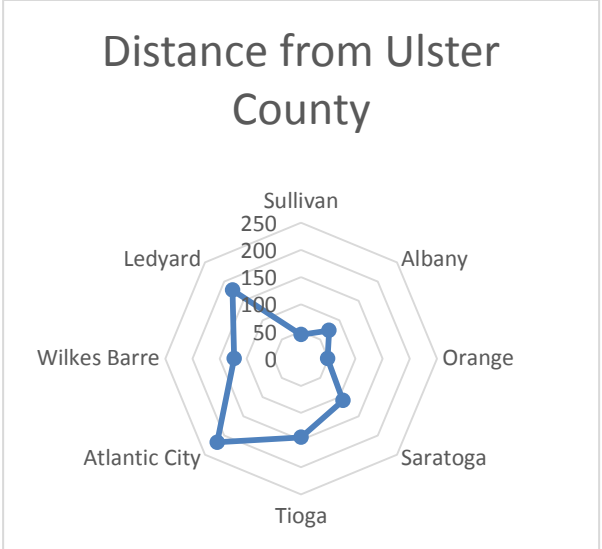


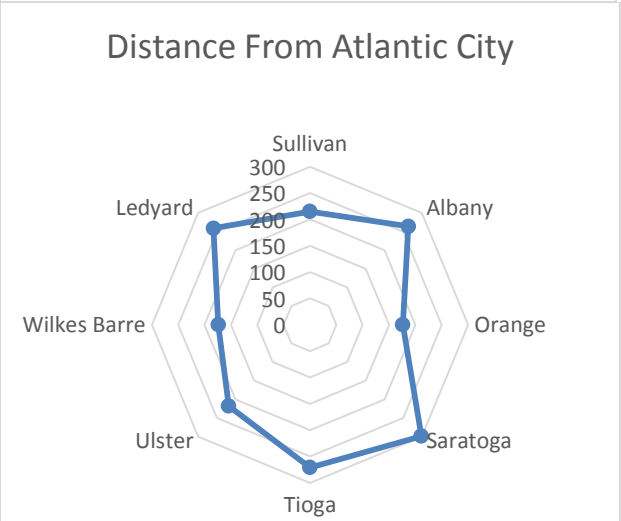


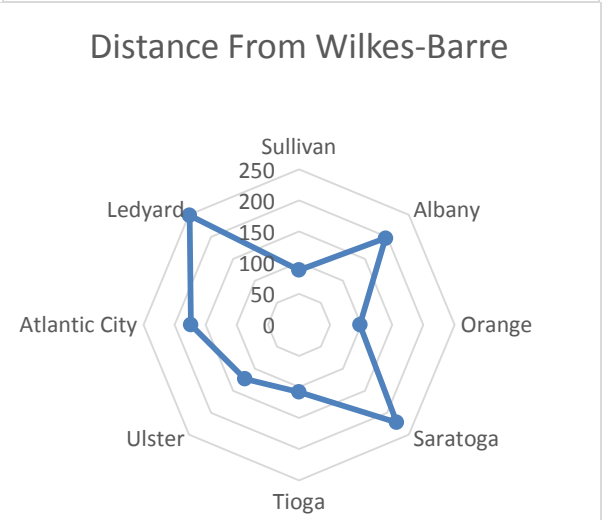


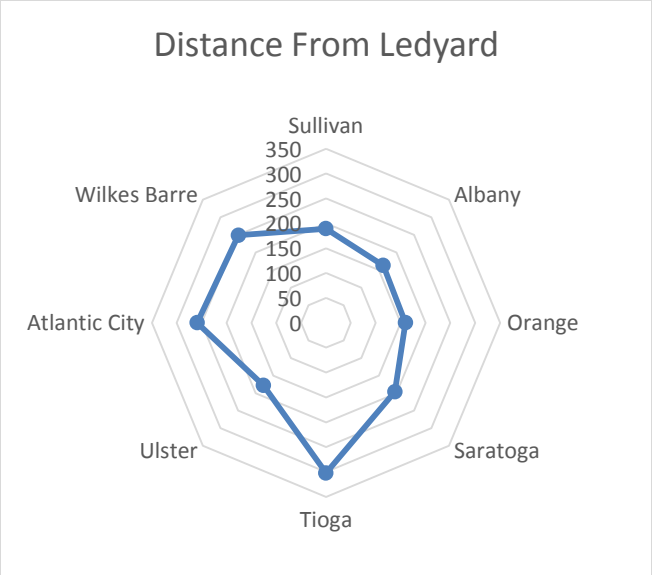



Distance from Tioga County
Sullivan
Albany
Orange
Saratoga
Ulster
Atlantic City
Wilkes Barre
Ledyard
400
300
200
100
0


Distance from Ulster County
Sullivan
Albany
Orange
Saratoga
Tioga
Atlantic City
Wilkes Barre
Ledyard
250
200
150
100
50
0


Distance From Atlantic City
Sullivan
Albany
Orange
Saratoga
Tioga
Ulster
Wilkes Barre
Ledyard
300
250
200
150
100
50
0


Distance From Wilkes-Barre
Sullivan
Albany
Orange
Saratoga
Tioga
Ulster
Atlantic City
Ledyard
250
200
150
100
50
0



Atlantic City, Wilkes-Barre, and Ledyard charts were included for visual reference.

Distance between Existing Casinos and Proposed Counties - Section Conclusion

As is, this section arrives at no relevant conclusion as it assumes **every** county will get a casino. However the client and/or state may find the radar charts useful by starting with their closest choice and eliminating locations.

Adaptive Re-use

What is Adaptive Re-use (AR)? It is the re-use or repurposing of a structure to prolong the period from cradle-to-grave for a building by retaining all or most of the structural system and as much as possible of other elements, such as cladding, glass, and interior partitions. Re-use, readaptation, reappropriation of existing or built structures has remote historical precedents. In antiquity, durable, sturdy structures of stone and masonry outlived empires and often changed program many times. In modernity, the desire to preserve historical buildings and neighborhoods emerged in many Western countries out of various romanticist, nationalist, and historicist streams. Today, the imperative to extend the life cycle of a structure is related to various sustainability goals: sprawl minimization, preservation of virgin materials and energy conservation. Also, many Western cities are changing dramatically as industrial operations more often than not move to the South and the East leaving massive, sturdy buildings vacant. Institutional nature is also changing with many old hospitals, sanatoriums, military buildings, and even office blocks are becoming redundant. AR becomes a means to revitalize urban life and declining neighborhoods. [42]

[42] http://www.archinode.com/lcaadapt.html

According to our research, including studies by Hudson Valley Patterns for Progress,[43] School of the Built Environment and Curtin University of Technology,[44] the positives of AR **to a community** are:

- Access to existing infrastructure
- Reduced waste from demolition of old structures
- Reduced energy from generating new materials
- Repair of the social fabric of deteriorating communities

Almost all of the negatives around Adaptive Re-use (below) apply to using the original structure/grounds for something other than originally intended. Building a new casino/resort/hotel on a site with no existing structure, but utilizing suitable adaptive re-use of the grounds reduces these negatives. Building a new casino/hotel/resort using an old hotel/resort building and grounds could potentially eliminate all negatives.

- High cost of development due to permitting, planning, permissions, SEQRA, etc.
- Lack of support or coordination from local economic development agencies
- Potentially higher design costs
- Existing layout and site constraints
- Potentially environmental remediation (e.g. lead & asbestos)

Adaptive Re-use - Section Conclusion

Factoring adaptive re-use alone, the state would benefit most from any casino that utilizes previously cleared ground without a current structure, and especially utilizing a site originally designed as a hotel/resort with existing structure and grounds. According to information from the client, all of Sullivan County's proposed sites fit this criteria.

[43] http://pattern-for-progress.org/sites/default/files/Adaptive%20Reuse%20Final.pdf

[44] http://scholar.google.com/scholar_url?hl=en&q=http://www.researchgate.net/publication/240428213_The_rhetoric_of_adaptive_reuse_or_reality_of_demolition_Views_from_the_field/file/72e7e520227eddba8e.pdf&sa=X&scisig=AAGBfm2f6DcJZLTzqgGxiq6ddo6NwNknWw&oi=scholarr

8. Sources and Backup

http://co.sullivan.ny.us/Home/tabid/36/Default.aspx - Sullivan County Home Page
http://co.sullivan.ny.us/Website/tabid/3242/default.aspx - Sullivan maps
http://www.albanycounty.com/Home.aspx - Albany County Home Page
http://www.co.orange.ny.us/ - Orange County Home Page
http://www.saratogacountyny.gov/ - Saratoga County Home Page
http://www.tiogacountyny.com/ - Tioga County Home Page
http://ulstercountyny.gov/ - Ulster County Home Page
https://www.facebook.com/pages/Office-of-the-Ulster-County-Executive/108553972524812 - Ulster County Facebook Page
http://www.labor.ny.gov/stats/lslaus.shtm - County historical UM data by year
http://en.wikipedia.org/wiki/Concord_Resort_Hotel - General Concord Hotel History
https://www.census.gov/hhes/www/income/data/historical/county/county3.html - Historic income by county
http://quickfacts.census.gov/qfd/states/36/36105.html - Income, etc. by state and county
http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl - County Business Patterns
http://tigerweb.geo.census.gov/datamapper/map.html - Census Data Mapper (used for Vacancy Rate)
http://www.tax.ny.gov/research/property/assess/sales/resmedian.htm - Median Home Sales
http://www.elections.ny.gov/NYSBOE/elections/2013/proposals/2013GeneralElection-Prop1.pdf - Proposition 1 Results
http://www.countyhealthrankings.org/ - Healthcare study
http://www.preventionweb.net/english/maps/index.php?cid=185 – Disaster Map
http://gis.dot.ny.gov/tdv/ - Traffic Density Maps
http://www.gamblingresearch.org/synopses/details.php?id=601 – Gambling Travel research study
http://www.archinode.com/lcaadapt.html- Adaptive reuse info
http://www.criminaljustice.ny.gov/crimnet/ojsa/indexcrimes/county_totals.htm - Crimes by County
http://www.cdc.gov/media/releases/2012/p0516_higher_education.html - CDC study