Economic Impacts of Private Practice Physicians in the State of New York

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

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Executive Summary

Private Practice Physicians are vitally important to the State of New York, both in terms of their contribution to the structural economy (i.e. economic impacts) and their contribution to the public good. This study estimates the economic impact of Private Practice Physicians in the State of New York through use of the Redyn econometric model, in combination with a number of external data sources. It was completed by Specialized Analytics and its partners Kavet, Rockler & Associates, and sponsored by the Medical Society of the State of New York.

Federal government providers of data regarding employment, wage, income, output (sales), etc, generally report the activity of Private Practice Physicians as "Offices of Physicians," which receives the designation 62111 at the 5-digit level of detail in the North American Industrial Classification System (NAICS). This industry is one of the largest industries in the State of New York by any measure, and in 2008 ranked:

- second in total business establishments
- sixth in total employment
- seventh in total personal income
- thirteenth in total corporate sales

Contributions to the structural economy by Private Practice Physicians in the State of New York go beyond direct employment, wages, and output. Two additional components which must be considered are indirect effects (all goods and services consumed by an industry in the process of conducting business) and induced effects (all goods and services consumed by employees through utilization of their wages). When all these factors are considered, the economic impacts of the Private Practice of Medicine in the State of New York, on the State of New York, for 2008 were:

- total employment of 330,594 persons
- total personal income of $24.096 billion
- total corporate sales of $44.748 billion

By 2020, the economic impacts on the State of New York are projected to increase to:

- total employment of 474,186 persons
- total personal income of $42.522 billion
- total corporate sales of $71.910 billion

The economic impacts of the Private Practice of Medicine in the State of New York, on the United States as a whole, for 2008 were:

- total employment of 670,912 persons
- total personal income of $41.053 billion
- total corporate sales of $91.986 billion

By 2020, the economic impacts on the United States as a whole are projected to increase to:

- total employment of 956,756 persons
- total personal income of $71.631 billion
- total corporate sales of $155.004 billion

Further, the activities of Private Practice Physicians make large contributions to both State and Local government tax revenues. In 2008, these contributions were:

- New York state tax revenue of $4.509 billion
- New York local tax revenue of $4.695 billion

By 2020, these contributions are projected to increase to:

- New York state tax revenue of $7.965 billion
- New York local tax revenue of $8.292 billion

There were 70,048 licensed physicians in the State of New York in 2008. Just over 60.6% of all physician employment in the State of New York is in Private Practice Medicine, which equates to 42,456 physicians if each is classified as either engaging in Private Practice Medicine, or engaging in Institutional Medicine (primarily hospital practice). In reality there are individual physicians engaged in both private and institutional practice, but the simplifying

assumption of one or the other is useful for clarity. Each Private Practice Physician in the State of New York supports significant economic activity. In 2008, each Private Practice Physician supported, in the State of New York, on average:

- employment of 7.79 persons
- personal income of $568 thousand
- corporate sales of $1.054 million
- New York state tax revenue of $106 thousand
- New York local tax revenue of $111 thousand

Each dollar of Private Practice Medical care in the State of New York supports much more than one dollar's worth of economic activity, as measured by total corporate sales. In 2008, each dollar of Private Practice Medical care supported, in the State of New York, on average:

- total economic activity of more than $2.16
- New York state tax revenue of nearly $0.22
- New York local tax revenue of nearly $0.23

As mentioned earlier, Private Practice Physicians also make important contributions to the public good. Many of these contributions have clear and significant economic impacts, including, among others:

- Greater employment consistency due to improved health through preventative and acute care
- Greater productivity due to increased physical capabilities through improved health
- Greater productivity due to increased happiness/ satisfaction through improved health

An attempt to quantify the economic impact of these contributions to the public good is beyond the scope of this study. However, much of the data generated for this study is of use to any further study which attempts to do so.

About the Study

Study Proposal

What are the Economic Impacts of Private Practice Physicians in New York?

Health care is an increasingly important topic in American life. This is true in all facets of our society, and for each individual in our society. Health care reform dominates not only the daily news cycle in late 2009, but also occupies a major portion of policy discussion and debate at each level of government, especially Federal and State.

At this time when policy decisions are being enacted that affect every participant in the provision of health care, it is increasingly important for practitioners and their member groups to possess a solid understanding of their roles within health care as a whole, as well as the impacts of those roles. A fundamental understanding of the economic impact of Private Practice Physicians, and defensible data demonstrating that impact, helps local-level, state-level and national-level physician member organizations pursue important goals for themselves and the patients they serve.

This study is undertaken by the Medical Society of the State of New York (MSSNY) to achieve that understanding. As such, it uses the best available economic tools and data, as well as a high level of geographic and sector detail, to estimate the economic impacts of physicians engaged in the Private Practice of Medicine in the State of New York.

Study Regions

The State, each MSA, each County

New York is a diverse state in terms of the size and profile of the 62 counties of which it's comprised, ranging from New York County (the largest and densest county in the United States in terms of economic activity) to Hamilton county (among the smallest by the same measure). It contains the largest metropolis in the country, and yet much of the state is more rural than is commonly understood.

Given this wide variety of counties, it is useful to evaluate the economic impact of Private Practice Physicians at the county level. This allows for a complete understanding of how that impact differs across counties of widely varying profiles. This study estimates the economic impact of Private Practice Physician activity in each county on each county in the State of New York. A complete list of counties in the State of New York, as well as a map showing their locations within the state, is available in Appendix A.

County level results allow for the aggregation of impacts to the Metropolitan Statistical Area (MSA) level. There are 12 MSAs partially or wholly contained within the State of New York, and this study provides estimates for the economic impact of Private Practice Physician activity within the New York component of each. In addition to these MSAs, non-MSA counties in the State of New York are divided into 4 non-MSA regions as defined by the Bureau of Labor Statistics according to location within the state. Impacts are estimated for non-MSA regions in the same manner as for MSAs. For the purposes of this study, state references are removed from MSA names, and the New York component of the New York-Northern NJ-Long Island MSA is designated as New York-Long Island. A complete list of State of New York MSAs and non-MSA areas, their component counties, and maps showing their locations within the state, is available in Appendix A.

Finally, county level results are aggregated to the state level for the State of New York as a whole. At this level it is possible to provide useful and defensible information about the share of economic impacts which can be attributed to each Physician Specialty Grouping designated for this study by the MSSNY.

Study Plan

How to Estimate Economic Impact

This study uses commonly accepted and well-tested methods of Input-Output economic modeling to estimate impacts. These methods of estimating the economic impact of a specific sector are relatively straight-forward

and easy for both economists and lay-persons to understand.

In an Input-Output model of the structural economy, the impact of any specific sector can be estimated by removing all activity for that sector from the region of interest and allowing the model to remove any other activity that would otherwise have supported the sector of interest. For this study, the sector of interest is the activity of Private Practice Physicians, which is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the five-digit level of detail. Further, for this study the regions of interest, as previously noted, are each county in the State of New York.

Results presented in this study are estimates arrived at using the best available econometric tools and data, as opposed to results that might be obtained through a survey of all Offices of Physicians in the State of New York. Such a survey process would be both prohibitively time-consuming and prohibitively expensive, and would likely not provide increased accuracy given variations in self-reporting that are common in survey research.

Study Tool

The Redyn Model

The primary tool used for this study is the Redyn economic model, a product of Specialized Analytics. This model is widely used and accepted in the market for such tools. It has been rigorously vetted by the community of economists, both those in the private sector and those associated with academic institutions.

The Redyn economic model is the largest, most detailed economic model currently available. It is calibrated to data published by a number of public entities, including, among others:

- The Bureau of the Census (Census)
- The Bureau of Labor Statistics (BLS)
- The Bureau of Economic Analysis (BEA)
- The Department of the Treasury (Treasury)
- The Department of Energy (DoE)

Redyn is a structural model of the US economy that clearly incorporates cause-and-effect relationships between entities in the model. It combines conventional, highly-detailed Input-Output matrices with more comprehensive Social Accounting Matrices to explicitly account for all economic transactions. The baseline case of the model incorporates some underlying assumptions, including: all producers maximize profit; all consumers maximize utility; all local markets clear in each time period.

The Redyn model offers a greater level of detail for economic analysis than is available from any other model. Industrial sectors are defined to the six-digit level of detail in accordance with the North American Industrial Classification System (NAICS). Occupational sectors are defined to the six-digit level of detail in accordance with the Standard Occupational Classification (SOC) system. Goods and Service commodities are available to the detailed benchmark level as established by the Bureau of Economic Analysis (BEA), and Labor commodities are added to correspond on a one-to-one basis with each occupational type in the model. Additional industries and commodities representing the work and output of governments, speculators, households, and land are incorporated, as well. Geographic detail is similarly robust in the Redyn model as it includes complete regional economic data for each county, county-equivalent area, and independent city in the United States.

Spatial relationships between regions in the Redyn model are defined using impedance values for each of several modes of transport as described by the Oak Ridge National Laboratories Intermodal Transportation Network Modeling system. Thus, in the model, effective distance between any two regions is not based on straight-line physical separation, but rather by the relative difficulty of transportation between regions for each of several transportation modalities: highway, rail, water, air, and pipeline. Transportation impedance values are directional, meaning impedance from region A to region B is not necessarily equivalent to impedance from region B to region A. Further, because industry sectors in the model use a unique mix of transportation services in the process of distributing commodities produced, the Redyn model contains commodity-specific data regarding the difficulty of moving goods and services to and from each region in the model for each commodity in the model.

New Economic Geography provides a theoretical foundation for the Redyn model to estimate trade of goods and services between regions in the model. A doubly-constrained gravity model is used to estimate these trade flows, meaning that all supply is consumed and all demand is met for all regions and all commodities.

The Redyn model is both massively multiregional and dynamic. A multiregional model can simultaneously estimate impacts on multiple regions. In the case of Redyn, hundreds of regions can be modeled in this manner for any given scenario, far more than can be accommodated by any other regional economic model - thus, "massively" multiregional.

A dynamic model estimates not only what effects will occur, but also when those effects will occur. General Equilibrium properties of the Redyn model allow it to maintain accurate year-by-year predictions throughout the baseline forecast period. This is especially important in scenarios that model the long-term effects of profitability or price changes.

One important key feature of the Redyn economic model is consistency. In the model, all sectors exhibit essentially the same behavior. That is, they transform some menu of commodities to a different menu of commodities via sector-specific methods which are influenced by sector-, location-, and time-specific properties. A few distinct examples of this behavior are:

- manufacturers consume raw and pre-fabricated materials, energy, various forms of labor, capital equipment, facilities, and land to produce goods for sale
- service providers consume the same things in typically different ratios (e.g. fewer raw materials and pre-fabricated goods, more labor) to produce services for sale
- households consume final demand goods, energy, facilities, and land to produce labor of the type provided by their occupants

While this underlying behavior seems simplistic, it allows for the simulation of extremely complex behaviors and outcomes when applied to a large number of sectors across a large number of regions through a large number of years. It simultaneously allows for calibration of sector-, location- and time-specific behaviors to real economic data, as well as economic analysis at extremely fine levels of regional and sector detail.

Study Metrics

Impact Concepts Reported in this Study

Data regarding hundreds of concepts can be extracted from the Redyn model. This study focuses on five important concepts chosen both for their usefulness as descriptive measures of economic impact, as well as the ease with which they are understood by a wide variety of audiences. Those key concepts are:

- Total Employment
- Total Personal Income
- Total Corporate Sales
- New York State Tax Revenue
- New York Local Tax Revenue

Total employment is reported throughout this study in Full-Time Equivalent (FTE) employment units. That is, each job reported represents work completed during a full-time schedule for a single person working a standard 40-hour work week throughout the course of the year. The actual number of people employed varies somewhat from this number due to part-time employment, overtime employment, and other similar deviations. However, the FTE concept is a widely accepted means of collecting and reporting employment information.

Total personal income is reported throughout this study in thousands of dollars ($1,000s). Total personal income consists of wages paid to employees and proprietors' income.

In the Redyn model, historical data for employment, wage bill, and proprietors' income are taken from several sources, including: the Quarterly Census of Employment and Wage (QCEW) as published by the Bureau of Labor Statistics (BLS), County Business Patterns as published by the Bureau of the Census (Census), the Regional Economic Information System (REIS) as published by the Bureau of Economic Analysis (BEA), and others.

Total corporate sales is reported throughout this study in thousands of dollars ($1,000s). Total corporate sales consists of all sales of goods and services produced by affected sectors. In the Redyn model, historical data for output (sales) are taken from several sources, including: Benchmark Input-Output tables as published by the BEA, Input-Output tables and Input-Output projections as published by the BLS, the National Income and Product Accounts (NIPA) data as published by the BEA, and others.

New York state tax revenue is reported throughout this study in thousands of dollars ($1,000s). New York state tax revenue consists of all sources of funding for the State of New York government.

New York local tax revenue is reported throughout this study in thousands of dollars ($1,000s). New York local tax revenue consists of all sources of revenue for local governments in the State of New York, including those for counties, municipalities, etc.

In the Redyn model, historical data for New York state tax revenues and New York local tax revenues are taken primarily from the Census of Government Finance as published by the Census. Revenue items designated in this publication are correlated with appropriate income and consumption concepts within the model to allow for accurate prediction of state and local tax revenue changes as a result of other activity within the model. Census of Government Finance data is published at the state level, and all tax rates for individual counties in the Redyn model are average rates for all counties within each state. For this study, all tax revenue effects reported are the result of average taxation rates for all counties in the State of New York. As a result, relative distribution of New York state tax revenue and New York local tax revenue are very similar. While state and local tax revenue impact values will be reported individually, the distribution of tax revenue impacts will be discussed as a single concept.

All currency values in this study are reported in real 2008 dollars. This allows for easy comparison between years, and means that observed increases and decreases in sector activity are the result of inflation adjusted growth or contraction.

Finally, all impacts reported in this study are impacts within the State of New York, with the sole exception of impacts reported at the State level. At this highest level of geographic aggregation, impacts on the remainder of the United States are also reported for employment, personal income, and corporate sales.

Study Neutrality

Independence of Data and Methodology

All data sources for the primary tool for this study, the Redyn model, are produced by public entities not associated with or controlled by any producer or demographic sectors that are represented within that model. Therefore, forecast results produced by the Redyn model are not biased toward any particular outcome other than those that historical data and known relationships between sectors and locations would suggest.

For this study, two sources of data external to the model are required:

- data regarding the relative distribution of Physician Specialty Groupings within the State of New York
- data regarding the relative compensation of Physician Specialty Groupings

Both data sources are required to determine the share of the economic impact of Physicians engaged in Private Practice Medicine that is attributed to each Physician Specialty Grouping. Compensation data for this study is provided by entities not associated with the study sponsor, the MSSNY, through independent survey research.

The MSSNY does provide data regarding the relative distribution of Physician Specialty Groupings within the State of New York. However, because this is simple survey data concerning the geographic location of member and non-member physicians, and is comprehensive with regard to physicians licensed in the State of New York, it is not reasonably subject to bias. This data in no way impacts the type or scope of economic impacts reported by this study.

Data and Methodology

Data within the Redyn Model

The Redyn model provides a wide variety of information about the Private Practice of Medicine in the United States. For each county, data is available regarding the scope of that practice, the individuals performing that practice, the goods and services necessary to support it, and the location of the producers of those goods and services.

The scope of the Private Practice of Medicine is generally captured as the activity of "Offices of Physicians," which receives the designation 62111 at the 5-digit level of detail in the North American Industrial Classification System (NAICS). The Redyn model incorporates employment, wage bill, proprietors' income, and output information about this industry as published by a number of federal data providers as noted in the description of study metrics.

Occupational data regarding individuals involved in the Private Practice of Medicine are available at the most detailed level of the Standard Occupational Classification (SOC) system as reported in the Occupational Employment Statistics (OES) program as published by the Bureau of Labor Statistics. Of particular interest for this study are the eight physician occupations included in the minor group 29-1060: Physicians and Surgeons, as listed in Table 1 (this page).

Finally, goods and services necessary to support the private practice of medicine are tracked at the most detailed level available. Budget inputs for "Offices of Physicians" are taken from input-output data as published by the Bureau of Economic Analysis and the Bureau of Labor Statistics. Details regarding the volume of transactions, type of suppliers, and location of suppliers are captured by commodity trade information within the model.

Table 1

SOC Code	Detailed Occupation
29-1061	Anesthesiologists
29-1062	Family and General Practitioners
29-1063	Internists, General
29-1064	Obstetricians and Gynecologists
29-1065	Pediatricians, General
29-1066	Psychiatrists
29-1067	Surgeons
29-1069	Physicians and Surgeons, All Other

Table 1: Physician Occupations in Occupational Employment Statistics. Detailed occupations in SOC minor group 29-1060: Physicians and Surgeons.

Data from the Medical Society of the State of New York

Member and non-member data provided by the Medical Society of the State of New York is the basis for the total population of physicians in the State of New York, as well as the breakdown of physicians by Specialty Grouping. For this study, physician specialties were aggregated into 21 Specialty Groupings, as indicated in Table 2 (page 8).

Data provided by the MSSNY includes member and non-member populations for each Specialty Grouping in each county in the State of New York. The county to which a physician is assigned is based on the address retained for each individual physician, some of which are practice addresses and some of which are residence addresses. Limitations for the use of Specialty Grouping data arise as a result of this use of multiple address types, as detailed in subsequent sections.

Data on Relative Compensation

A number of surveys were reviewed to obtain data regarding the relative compensation of Physician Specialty Groupings as defined for this study. Among these were publications by:

- American Medical Group Association (AMGA)
- Medical Group Management Association (MGMA)
- Hospital & Healthcare Compensation Service (HHCS)
- The Hay Group
- Merritt, Hawkins & Associates
- Sullivan, Cotter & Associates
- Warren Surveys

Of the compensation survey data reviewed, the 2009 Physician Compensation Survey by the AMGA contained the greatest specialty detail and collected data from the

greatest number of respondent physicians. The AMGA publishes compensation survey data for physicians in the US as a whole, as well as within each of four US regions. Accordingly, AMGA survey data is the source for relative Specialty Grouping compensation for this study.

Because relative compensation, and not total compensation, is the concept of interest here, the broader national data was used instead of the more specific, and limited, regional data. This vastly larger respondent sample provides better understanding of relative Specialty Grouping compensation, which does not vary significantly by region, as does total compensation. Relative Specialty Grouping compensation for this study is listed in Table 2 (this page), and displayed in Figure 1 (page 9)

Note: Data regarding compensation of Clinical Pharmacologists was not available in any survey data reviewed. However, because pharmacologists as an occupation are compensated to a significantly lesser degree than physicians as an occupation, Clinical Pharmacologists were assigned a relative compensation value equal to the lowest Specialty Grouping value observed in available data.

Data on Rate of Participation in Private Practice Medicine

The rate at which physicians participate in Private Practice Medicine is a critical component of evaluating the economic impact of Private Practice Physicians. Further, in order to provide economic impact data by Specialty Grouping, it is necessary to determine the rate of participation in Private Practice Medicine for each Specialty Grouping.

Data from the Occupation Employment Statistics (OES) program as published by the Bureau of Labor Statistics details the rate at which the eight OES physician occupations participate in Private Practice Medicine at the national level. State-level OES data allows for the extrapolation of New York specific participation rates for each SOC physician occupation.

More than 75% of all physicians are captured by the seven specific physician occupations as defined in OES data, each of which has a one-to-one correspondence with a Specialty Grouping as defined for this study. Rates of participation

Table 2

Specialty Grouping	Total Physicians	Relative Compensation	Private Practice Rate	Private Practice Physicians
Anatomic/Clinical Pathology	1,400	1.74	54.56%	764
Anesthesiology	3,342	1.85	79.20%	2,647
Clinical Pharmacology	19	1.00	57.51%	11
Dermatology	945	1.77	44.85%	424
Emergency Medicine	1,923	1.35	70.38%	1,353
Family Medicine	4,290	1.00	65.10%	2,793
General Surgery	4,525	1.72	78.48%	3,551
Internal Medicine	24,532	1.04	61.13%	14,997
Neurology	1,377	1.35	47.74%	657
Obstetrics & Gynecology	3,640	1.49	79.85%	2,906
Ophthalmology	1,756	1.65	48.87%	858
Orthopedic Surgery	1,743	2.41	58.28%	1,016
Otolaryngology	718	1.85	50.85%	365
Pathology	160	1.74	49.44%	79
Pediatrics	6,870	1.17	58.65%	4,029
Physical Medicine & Rehabilitation	1,039	1.20	66.76%	694
Plastic Surgery	619	1.97	47.61%	295
Psychiatry	5,859	1.07	24.66%	1,445
Radiology	2,962	2.09	71.82%	2,127
Urology	856	1.97	70.79%	606
Other or No Specialty	1,473	1.07	57.00%	840
All Specialty Groupings	**70,048**	**1.32**	**60.61%**	**42,456**

Table 2: Physician Specialty Grouping Population, Relative Compensation, and Participation in Private Practice Medicine. Total Physician Population, Relative Compensation Index, Rate of Participation in Private Practice Medicine, and Total Private Practice Physician Population for each Physician Specialty Grouping

Figure 1

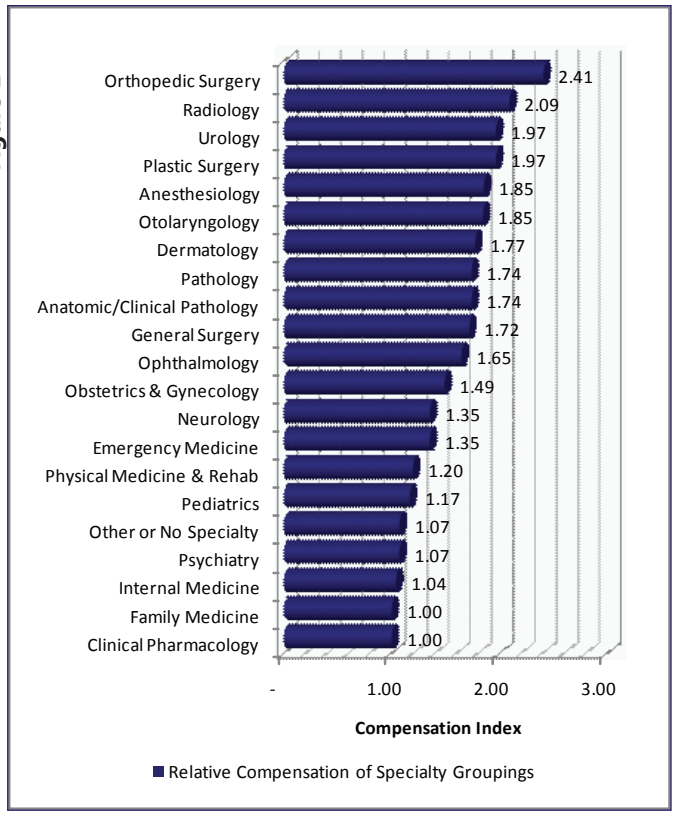

Figure 1: Relative Compensation by Physician Specialty Grouping. The relative compensation index for each physician specialty grouping where the least compensated specialty grouping is assigned an index of 1.

in Private Practice Medicine were calculated for each of the 14 Specialty Groupings included in this study that are not specifically captured in OES data, but rather are reported with the "Physicians and Surgeons, All Other" occupation designation.

Correlation values between the distribution, within the State of New York, of each of these 14 Specialty Groupings and each of the seven OES physician occupations were calculated. Effects contributed by the distribution of total physician population were controlled. Positive correlations between the distributions of Specialty Groupings were used to generate a weighted average of the seven known rates of participation for each of the 14 unknown rates of participation. Resulting rates of participation in Private Practice Medicine for each specialty grouping are listed in Table 2 (page 8), and displayed in Figure 2 (page 10). Resulting Private Practice Physician populations for each specialty grouping are listed in Table 2 (page 8), and displayed in Figure 3 (page 10).

Method of Study

This study was completed using a 63-region model in the Redyn economic analysis application. Regions in the model included each county in the State of New York, as well as a single region for the remainder of the United States.

For each county in the model, an economic impact scenario was completed for NAICS 62111 - Offices of Physicians, for years 2008 through 2020, as described in ***About this Study: Study Plan*** above. Impacts for each scenario were scaled such that total impacts on NAICS 62111 were equal to the original baseline values for that sector. This prevents overestimation of impacts due to the fact that NAICS 62111 requires some amount of itself to support its activities.

Results were aggregated to the MSA and State levels. For the State of New York, impacts were shared out to each Specialty Grouping based on the following data:

- Specialty Grouping Population
- Specialty Grouping rate of participation in Private Practice Medicine
- Specialty Grouping relative compensation

Average impacts for the State of New York were calculated for an individual Private Practice Physician in each Specialty Grouping, as well as for the average Private Practice Physician across the total population.

Average State of New York Economic Value of one dollar of Private Practice Medical care was calculated for the State of New York, each MSA and MSA-equivalent, and each county. Average State of New York State and Local Tax Revenue per dollar Private Practice Medical care was calculated for the same regions.

Figure 2

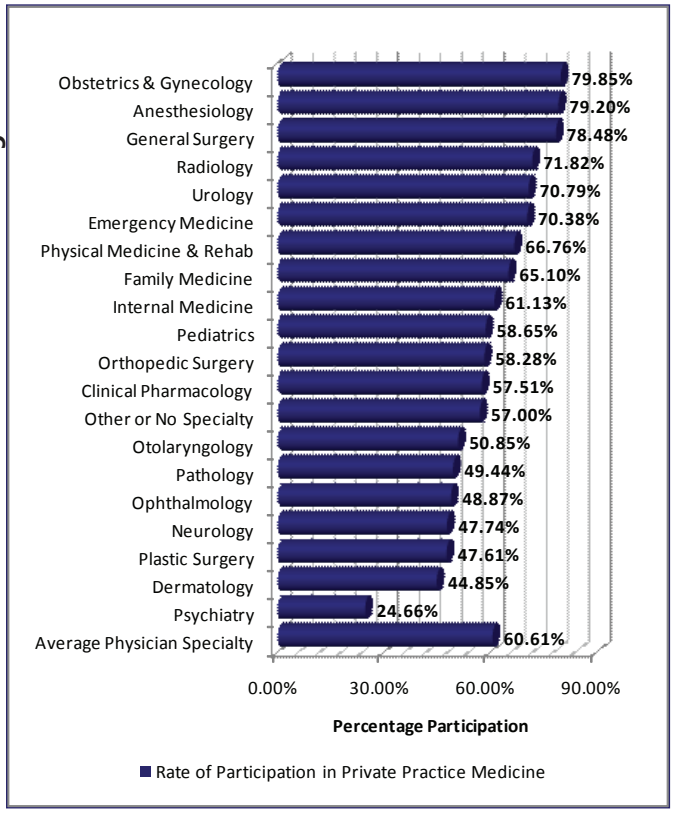

Figure 2: Rate of Participation in Private Practice Medicine by Physician Specialty Grouping. The rate of participation in private practice medicine for each physician specialty grouping, as well as the average rate for all specialty groupings.

Figure 3

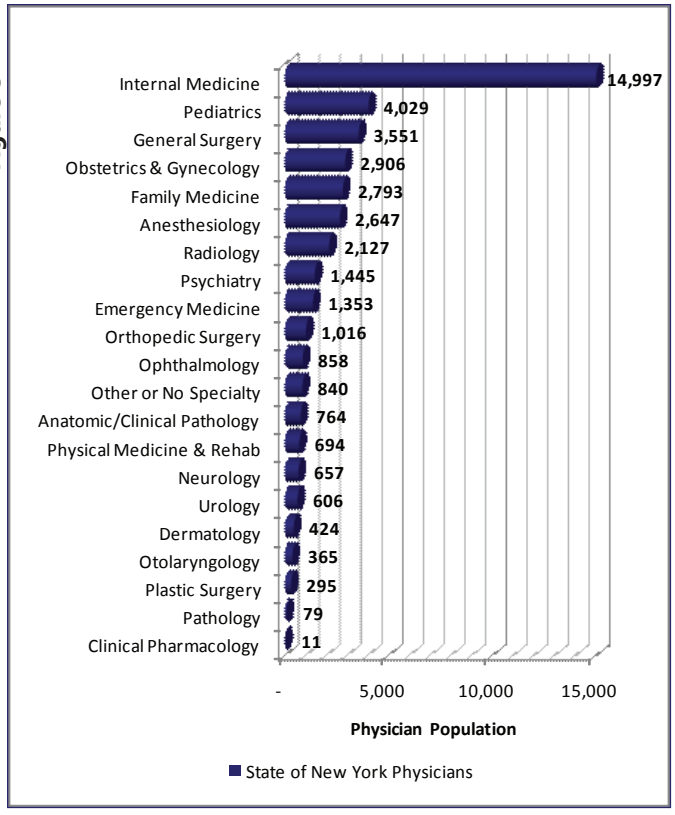

Figure 3: Population of Private Practice Physicians by Physician Specialty Grouping. The total population of private practice physicians for each physician specialty grouping, as calculated given the average rate of participation in private practice medicine above.

Offices of Physicians as Compared to Other State of New York Industries

NAICS 62111 - Offices of Physicians is one of the largest industries in the State of New York. For 2008, it ranked near the top in many categories of economic activity, four of which are detailed here.

Offices of Physicians ranked second in the State of New York for 2008 in the number of business establishments. Only home-based businesses are more prevalent in New York than small businesses operated by Private Practice Physicians. The ten largest industries in the State of New York for 2008, in terms of the number of business establishments, are listed in Table 3 (page 11).

Offices of Physicians ranked sixth in the State of New York for 2008 in terms of total employment as measured in full-time-equivalents (FTE). General Medical and Surgical Hospitals are the largest employer in New York. The ten largest industries in the State of New York for 2008, in terms of employment, are listed in Table 4 (page 11).

Offices of Physicians ranked seventh in the State of New York for 2008 in terms of total personal income. Securities Brokerage firms generate the highest aggregate personal income in New York. The ten largest industries in the State of New York for 2008, in terms of personal income, are listed in Table 5 (this page).

Offices of Physicians ranked thirteenth in the State of New York for 2008 in terms of total corporate sales generated. Management of Companies and Enterprises firms generate the highest aggregate corporate sales in New York. The thirteen largest industries in the State of New York for 2008, in terms of corporate sales, are listed in Table 6 (this page).

Table 3

Rank	Industry Name
1.	Private Households
2.	**Offices of Physicians**
3.	Full-Service Restaurants
4.	Limited-Service Eating Places
5.	Residential Building Construction
6.	Lessors of Residential Buildings and Dwellings
7.	Offices of Lawyers
8.	Computer Systems Design and Related Services
9.	Management Consulting Services
10.	Wholesale Trades Agents and Brokers

Table 3: Top Ten New York Industries by Establishments, 2008. The ten largest industries in New York in 2008 as measured by total number of establishments.

Table 5

Rank	Industry Name
1.	Securities Brokerage
2.	Investment Banking and Securities Dealing
3.	General Medical and Surgical Hospitals
4.	Management of Companies and Enterprises
5.	Portfolio Management
6.	Offices of Lawyers
7.	**Offices of Physicians**
8.	Colleges, Universities, and Professional Schools
9.	Commercial Banking
10.	Computer Systems Design and Related Services

Table 5: Top Ten New York Industries by Personal Income, 2008. The ten largest industries in New York in 2008 as measured by total personal income.

Table 4

Rank	Industry Name
1.	General Medical and Surgical Hospitals
2.	Full-Service Restaurants
3.	Limited-Service Eating Places
4.	Colleges, Universities, and Professional Schools
5.	Supermarkets and Other Grocery (except Convenience) Stores
6.	**Offices of Physicians**
7.	Management of Companies and Enterprises
8.	Nursing Care Facilities
9.	Offices of Lawyers
10.	Services for the Elderly and Persons with Disabilities

Table 4: Top Ten New York Industries by Employment, 2008. The ten largest industries in New York in 2008 as measured by total employment in full-time equivalents (FTE).

Table 6

Rank	Industry Name
1.	Management of Companies and Enterprises
2.	Commercial Banking
3.	Securities Brokerage
4.	Computer and Peripheral Equipment Manufacturing
5.	Investment Banking and Securities Dealing
6.	Wired Telecommunications Carriers
7.	General Medical and Surgical Hospitals
8.	Lessors of Residential Buildings and Dwellings
9.	Real Estate Property Management
10.	Portfolio Management
11.	Offices of Lawyers
12.	Electric Power Transmission, Control, and Distribution
13.	**Offices of Physicians**

Table 6: Top Thirteen New York Industries by Corporate Sales, 2008. The ten largest industries in New York in 2008 as measured by total corporate sales.

Viewpoints in Reporting the Economic Impacts of Private Practice Physicians

The economic impacts of Physicians engaged in Private Practice Medicine in the State of New York are equivalent to the economic impacts of the industry into which their economic activity is classified, NAICS 62111 - Offices of Physicians. Total economic impacts are the aggregate total of three distinct types of economic effect caused by the activity of this industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of this industry
- **Indirect effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by this industry in the process of conducting business
- **Induced effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by employees of this industry in the process of utilizing their personal income

As indicated in ***About the Study: Study Method***, the economic impact of Private Practice Physicians was determined for each county in the State of New York on each county in the State of New York. This attention to regional detail provides two distinct viewpoints from which the resulting economic impacts can be analyzed, which are:

- Regional *share of* total economic impacts
- Regional *contribution to* total economic impacts

From the first viewpoint, the portion of total impacts in the State of New York that *is observed in a specific region* is analyzed. For example, the corporate sales impact on Erie County resulting from the Private Practice of Medicine in all counties of the State of New York during 2008 was $2.206 billion, of which $1.518 billion resulted from the Private Practice of Medicine in Erie County, and $688 million resulted from the Private Practice of Medicine in the other 61 counties of the State of New York. In other words, the Private Practice of Medicine in all counties of the State of New York generated $2.206 billion in corporate sales in Erie County during 2008.

In ***State of New York Impacts: Impacts at the Metropolitan Statistical Area Level*** (pages 16 through 31) and ***State of New York Impacts: Impacts at the County Level*** (pages 32 through 47), the economic impacts of Private Practice Physicians in the State of New York are reported from the first viewpoint for each Metropolitan Statistical Area (MSA) and each county, respectively. All five core concepts indicated in ***About this Study: Study Metrics*** are detailed individually in each of these sections.

From the second viewpoint, the portion of total impacts in the State of New York that *results from economic activity in a specific region* is analyzed. For example, the State of New York corporate sales impact resulting from the Private Practice of Medicine in Erie County during 2008 was $2.655 billion, of which $1.518 billion was observed in Erie county itself and $1.137 billion was observed in the remaining 61 counties of the State of New York. In other words, the Private Practice of Medicine in Erie County generated $2.655 billion in corporate sales in all counties of the State of New York during 2008.

In ***Metropolitan Statistical Area Contributions to Impacts*** (pages 54 through 70) and ***County Contributions to Impacts*** (pages 71 to 87), the economic impacts of Private Practice Physicians in each MSA and each county (respectively) are reported from the second viewpoint. All five core concepts indicated in ***About this Study: Study Metrics*** are detailed individually in each of these sections.

As it relates to support for the Private Practice of Medicine, a variance in the economic impacts reported from each viewpoint for a specific region indicates one of two cases. If economic impacts from the first viewpoint are greater than economic impacts from the second viewpoint, the region in question demands less from the remainder of the State of New York than the remainder of the State of New York demands from it. If economic impacts from the second viewpoint are greater than economic impacts from the first viewpoint, the region in question demands more from the remainder of the State of New York than the remainder of the State of New York demands from it.

State of New York Impacts

Impacts at the State Level

Economic impacts are reported in this section for the State of New York as a whole. As noted in ***About this Study: Study Metrics***, economic impacts on the remainder of the United States are reported, as well. This allows for reporting of the total nationwide economic impacts of Private Practice Physicians in the State of New York.

Total Employment

Total employment impact due to the Private Practice of Medicine in the State of New York for 2008, across all study regions, is 670,912 full-time equivalent (FTE) jobs. Of this number, 330,594 jobs (49.28%) occur in the State of New York, while the balance, 340,318 jobs (50.72%), occurs in the remainder of the United States.

This impact is expected to grow significantly by 2020. At that time, projected employment impact will increase to 956,756 FTE jobs. Of this number, 474,186 (49.56%) occur in the State of New York, while the balance, 482,570 jobs (50.44%), occurs in the remainder of the United States.

Figure 4

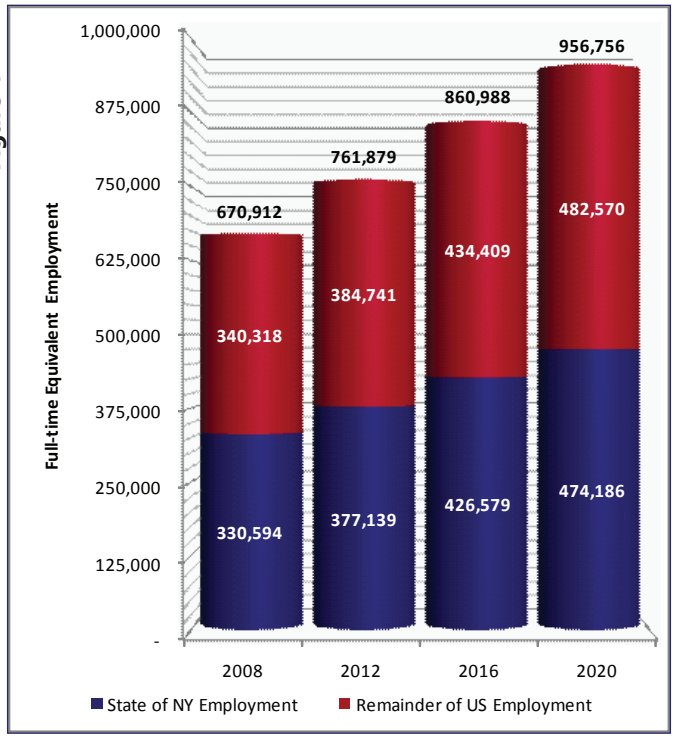

Figure 4: Total Employment Impact, 2008 - 2020. Total Employment impact in all study regions reported in Full-Time Equivalents (FTE).

Approximately three percent of all employment in the State of New York supported the activities of Private Practice Physicians in 2008. By 2020, just over 3.5 percent of all employment in the State of New York will support the activities of Private Practice Physicians. This increase is, in part, due to employment in this industry growing at a faster rate than employment in the broader economy.

Total employment impact is summarized in Table 7 (page 15), and displayed in Figure 4 (this page).

Total Personal Income

Total personal income impact due to the Private Practice of Medicine in the State of New York in 2008, across all study regions, is just over $41 billion. Of this amount, nearly $24.1 billion (58.69%) occurs in the State of New York, while the balance, just under $17 billion (41.31%), occurs in the remainder of the United States.

This impact is expected to grow significantly by 2020. At that time, projected personal income impact will increase to more than $71.6 Billion. Of this amount, just over $42.5 billion (59.36%) occurs in the State of New York, while the balance, just over $29.1 billion (40.64%), occurs in the remainder of the United States.

Approximately six percent of all personal income in the State of New York supported the activities of Private Practice Physicians in 2008. By 2020, nearly seven percent of all personal income in the State of New York will support the activities of Private Practice Physicians. This increase is primarily due to personal income in this industry growing at a significantly faster rate than personal income in the broader economy.

Total personal income impact is summarized in Table 7 (page 15), and displayed in Figure 5 (page 14).

Total Corporate Sales

Total corporate sales impact due to the Private Practice of Medicine in the State of New York in 2008, across all study regions, is nearly $92 billion. Of this amount, more than $44.7 billion (48.65%) occurs in the State of New York, while the balance, just over $47.2 billion (51.35%), occurs in the remainder of the United States.

This impact is expected to grow significantly by 2020. At that time, projected corporate sales impact will increase to more than $155 Billion. Of this amount, just over $71.9 billion (46.39%) occurs in the State of New York, while the balance, just nearly $83.1 billion (53.61%), occurs in the remainder of the United States.

Approximately five percent of all corporate sales in the State of New York supported the activities of Private Practice Physicians in 2008. By 2020, the percent of all corporate sales in the State of New York which supports the activities of Private Practice Physicians will remain approximately five percent. Corporate sales for this industry is growing at about the rate of corporate sales in the broader economy. This fact, coupled with relative growth rates in this industry for employment and personal income, may be indicative of declining industry profitability.

Total corporate sales impact is summarized in Table 7 (page 15), and displayed in Figure 6 (this page).

New York State Tax Revenue

New York state tax revenue impact due to the Private Practice of Medicine in the State of New York in 2008, across study regions in the State of New York, is just over $4.5 billion. If fiscal policy regarding New York state tax revenue remains constant through 2020, this impact is projected to grow to more than $7.9 billion. However, it is unlikely that fiscal policy related to New York state tax revenue will remain unchanged through this period.

New York state tax revenue impact is summarized in Table 7 (page 15), and displayed in Figure 7 (page 15).

Figure 5

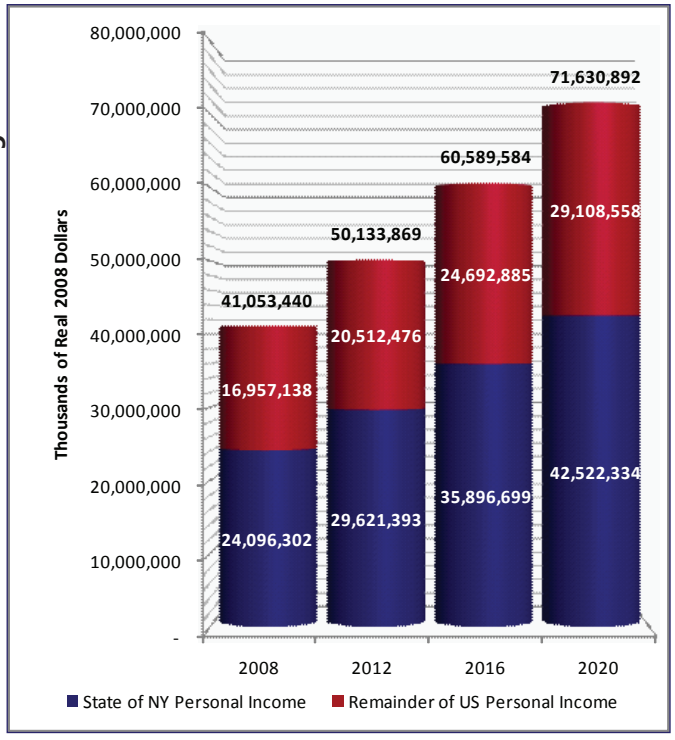

Figure 5: Total Personal Income Impact, 2008 - 2020. Total Personal Income impact in all study regions reported in thousands of real 2008 dollars ($1,000s).

Figure 6

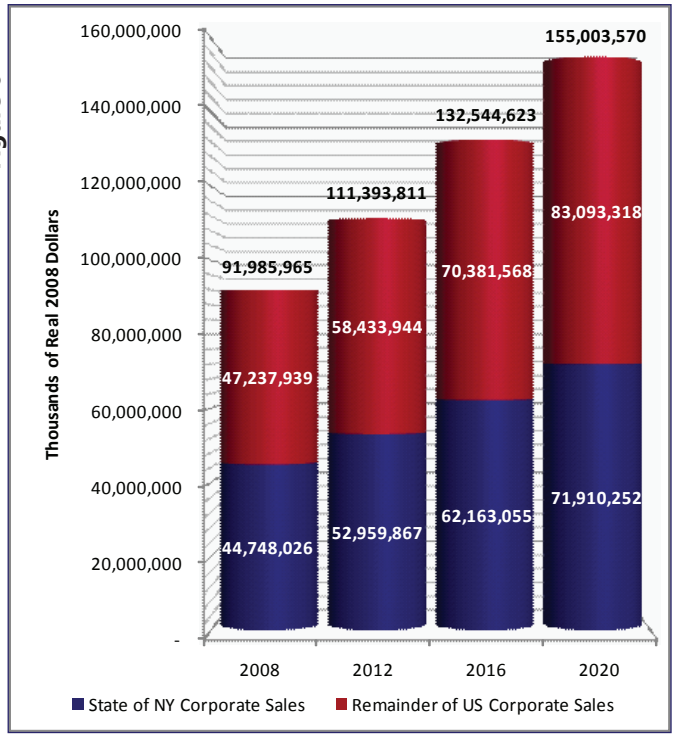

Figure 6: Total Corporate Sales Impact, 2008 - 2020. Total Corporate Sales impact in all study regions reported in thousands of real 2008 dollars ($1,000s).

New York Local Tax Revenue

New York local tax revenue impact due to the Private Practice of Medicine in the State of New York in 2008, across study regions in the State of New York, is nearly $4.7 billion. If fiscal policy regarding New York local tax revenue remains constant through 2020, this impact is projected to grow to nearly $8.3 billion. However, it is unlikely that fiscal policy related to New York local tax revenue will remain unchanged through this period.

New York local tax revenue impact is summarized in Table 7 (this page), and displayed in Figure 8 (this page).

Figure 7

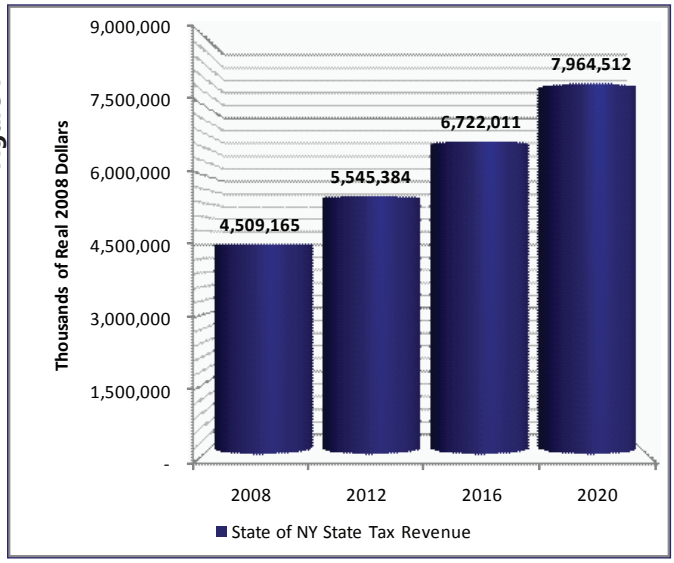

Figure 7: New York State Tax Revenue Impact, 2008 - 2020. New York State Tax Revenue impact reported in thousands of real 2008 dollars ($1,000s).

Figure 8

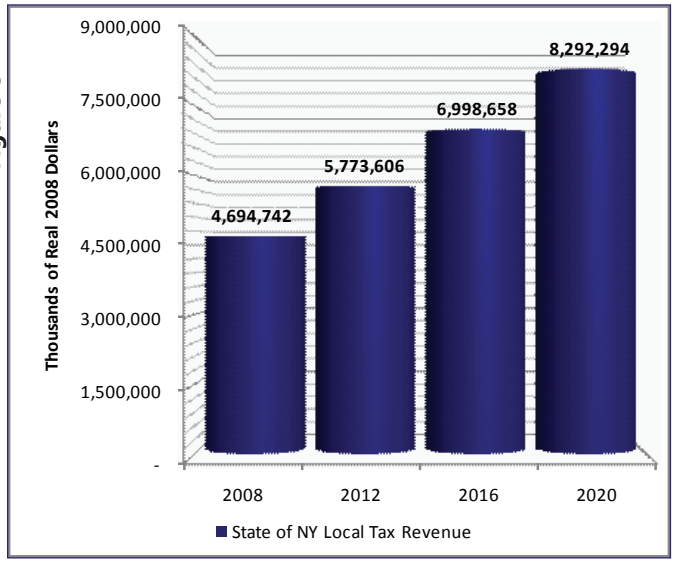

Figure 8: New York Local Tax Revenue Impact, 2008 - 2020. New York Local Tax Revenue impact reported in thousands of real 2008 dollars ($1,000s).

Table 7

Region				
Concept	**2008**	**2012**	**2016**	**2020**
State of New York				
Total Employment	330,594	377,139	426,579	474,186
Total Personal Income	24,096,302	29,621,393	35,896,699	42,522,334
Total Corporate Sales	44,748,026	52,959,867	62,163,055	71,910,252
New York State Tax Revenue	4,509,165	5,545,384	6,722,011	7,964,512
New York Local Tax Revenue	4,694,742	5,773,606	6,998,658	8,292,294
Remainder of the United States				
Total Employment	340,318	384,741	434,409	482,570
Total Personal Income	16,957,138	20,512,476	24,692,885	29,108,558
Total Corporate Sales	47,237,939	58,433,944	70,381,568	83,093,318
New York State Tax Revenue	-	-	-	-
New York Local Tax Revenue	-	-	-	-
The United States (total impacts)				
Total Employment	670,912	761,879	860,988	956,756
Total Personal Income	41,053,440	50,133,869	60,589,584	71,630,892
Total Corporate Sales	91,985,965	111,393,811	132,544,623	155,003,570
New York State Tax Revenue	4,509,165	5,545,384	6,722,011	7,964,512
New York Local Tax Revenue	4,694,742	5,773,606	6,998,658	8,292,294

Table 7: Total Economic Impacts, 2008 - 2020. Total Employment, Total Personal Income, Total Corporate Sales, New York State Tax Revenue, and New York Local Tax Revenue for years 2008, 2012, 2016, and 2020. Values are given for the State of New York, the Remainder of the United States, and the United States as a whole. Employment is reported in Full-Time Equivalents (FTE), and all other values are reported in thousands of real 2008 dollars ($1,000s).

Impacts at the Metropolitan Statistical Area Level

An examination the distribution of economic impacts resulting from the Private Practice of Medicine in the State of New York at the Metropolitan Statistical Area (MSA) Level reveals that the state is dominated by the New York-Long Island MSA. More than 68% of all economic activity generated by the Offices of Physicians in the State of New York occurs in that MSA. By this measure, it is more than twelve times as large as the next largest MSA in the state, Buffalo-Niagara Falls.

This disproportionality presents difficulties when attempting to present MSA-level comparisons on a single figure as most MSAs are scaled out of significance by New York-Long Island. Therefore, figures in this section are presented with the New York-Long Island MSA and the Buffalo-Niagara Falls MSA at the top, followed by the Buffalo-Niagara Falls MSA and all other MSAs and MSA-equivalents presented immediately below at one-tenth the horizontal scale.

Total Employment

The share of total employment impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each MSA ranges from 202,264 (61.18% of the state total) in the New York-Long Island MSA to 1,273 (39 hundredths of one percent of the state total) in the East Central non-MSA region. By 2020, these shares of total employment impact are projected to increase to 293,441 (61.88% of the state total) in the New York-Long Island MSA and 1,844 (39 hundredths of one percent of the state total) in the East Central non-MSA region. Shares of total employment impact due to the Private Practice of Medicine in the State of New York by MSA are listed in Table 8 (page 30), and are displayed in Figure 9 (page 17).

The relative distribution of total employment impact for 2008 by MSA is displayed in Map 1 (page 18). By 2020, the largest increase in share of total employment impact occurs in the Ithaca MSA (+2.40%) and the largest decrease occurs in the Elmira MSA (-3.83%). Percentage changes in share of total employment impact from 2008 to 2020 by MSA are displayed in Map 2 (page 19).

Total Personal Income

The share of total personal income impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each MSA ranges from $16.598 billion (68.88% of the state total) in the New York-Long Island MSA to $60.036 million (25 hundredths of one percent of the state total) in the East Central non-MSA region. By 2020, these shares of total personal income impact are projected to increase to $29.476 billion (69.32% of the state total) in the New York-Long Island MSA and $107.924 million (25 hundredths of one percent of the state total) in the East Central non-MSA region. Shares of total personal income impact due to the Private Practice of Medicine in the State of New York by MSA are listed in Table 8 (page 30), and are displayed in Figure 10 (page 20).

The relative distribution of total personal income impact for 2008 by MSA is displayed in Map 3 (page 21). By 2020, the largest increase in share of total personal income impact occurs in the Ithaca MSA (+4.13%) and the largest decrease occurs in the Elmira MSA (-3.92%). Percentage changes in share of total personal income impact from 2008 to 2020 by MSA are displayed in Map 4 (page 22).

Total Corporate Sales

The share of total corporate sales impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each MSA ranges from $30.498 billion (68.15% of the state total) in the New York-Long Island MSA to $111.731 million (25 hundredths of one percent of the state total) in the East Central non-MSA region. By 2020, these shares of total corporate sales impact are projected to increase to $49.086 billion (68.26% of the state total) in the New York-Long Island MSA and $180.993 million (25 hundredths of one percent of the state total) in the East Central non-MSA region. Shares of total corporate sales impact due to the Private Practice of Medicine in the State of New York by MSA are listed in Table 8 (page 30), and are displayed in Figure 11 (page 23).

The relative distribution of total corporate sales impact for 2008 by MSA is displayed in Map 5 (page 24). By 2020, the largest increase in share of total corporate sales impact occurs in the Ithaca MSA (+9.94%) and the largest decrease

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Figure 9

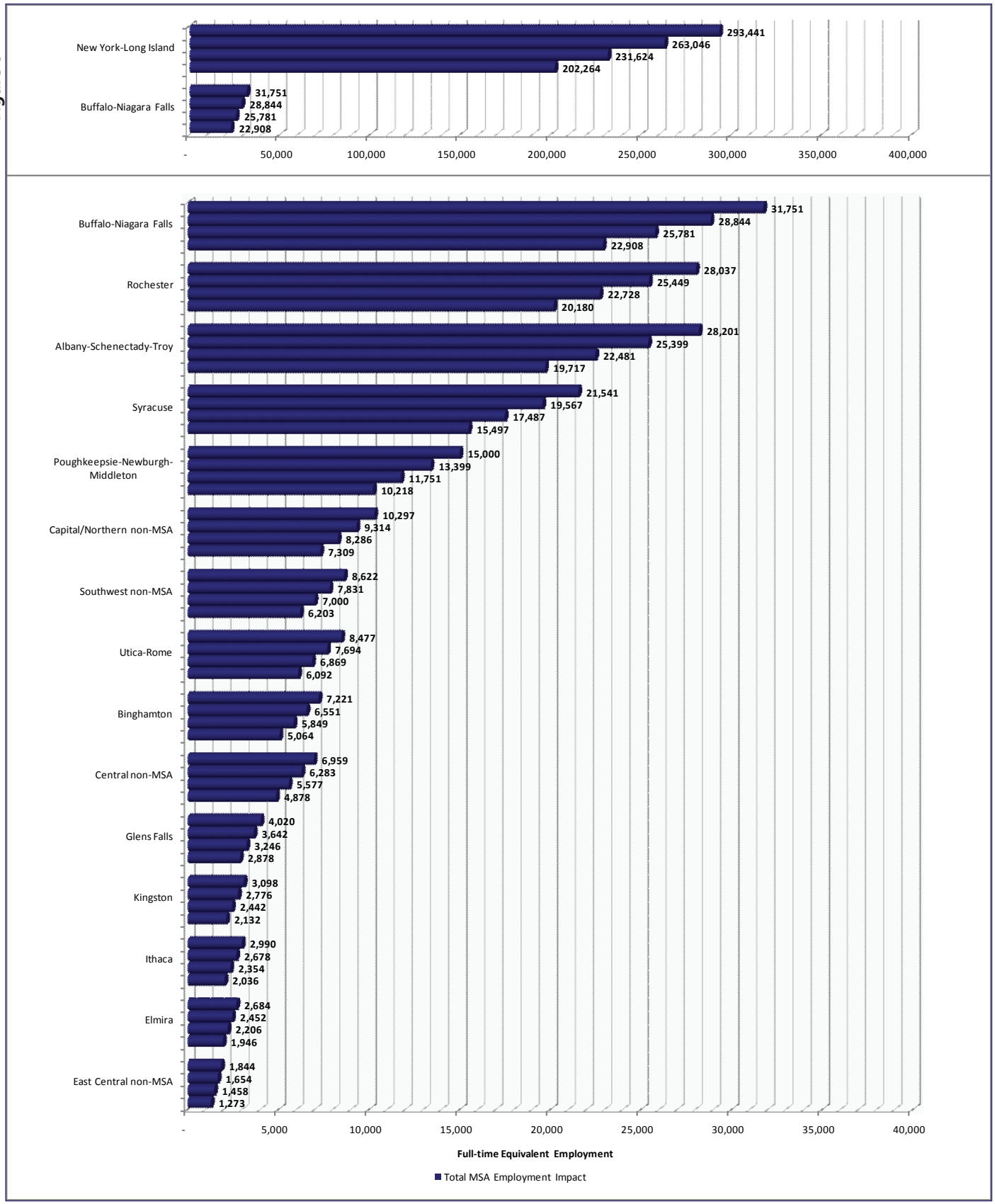

Figure 9: State of New York Employment Impact by MSA, 2008 - 2020. Share of total employment impact for each MSA and MSA-equivalent, reported in full-time equivalent employment.

occurs in the Elmira MSA (-6.36%). Percentage changes in share of total corporate sales impact from 2008 to 2020 by MSA are displayed in Map 6 (page 25).

New York State Tax Revenue

The share of NY state tax revenue impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each MSA ranges from $2.965 billion (65.76% of the state total) in the New York-Long Island MSA to $18.968 million (42 hundredths of one percent of the state total) in the East Central non-MSA region. By 2020, these shares of NY state tax revenue impact are projected to increase to $5.276 billion (66.23% of the state total) in the New York-Long Island MSA and $33.833 million (42 hundredths of one percent of the state total) in the East Central non-MSA region. Shares of NY state tax revenue impact due to the Private Practice of Medicine in the State of New York by MSA are listed in Table 8 (page 30), and are displayed in Figure 12 (page 26).

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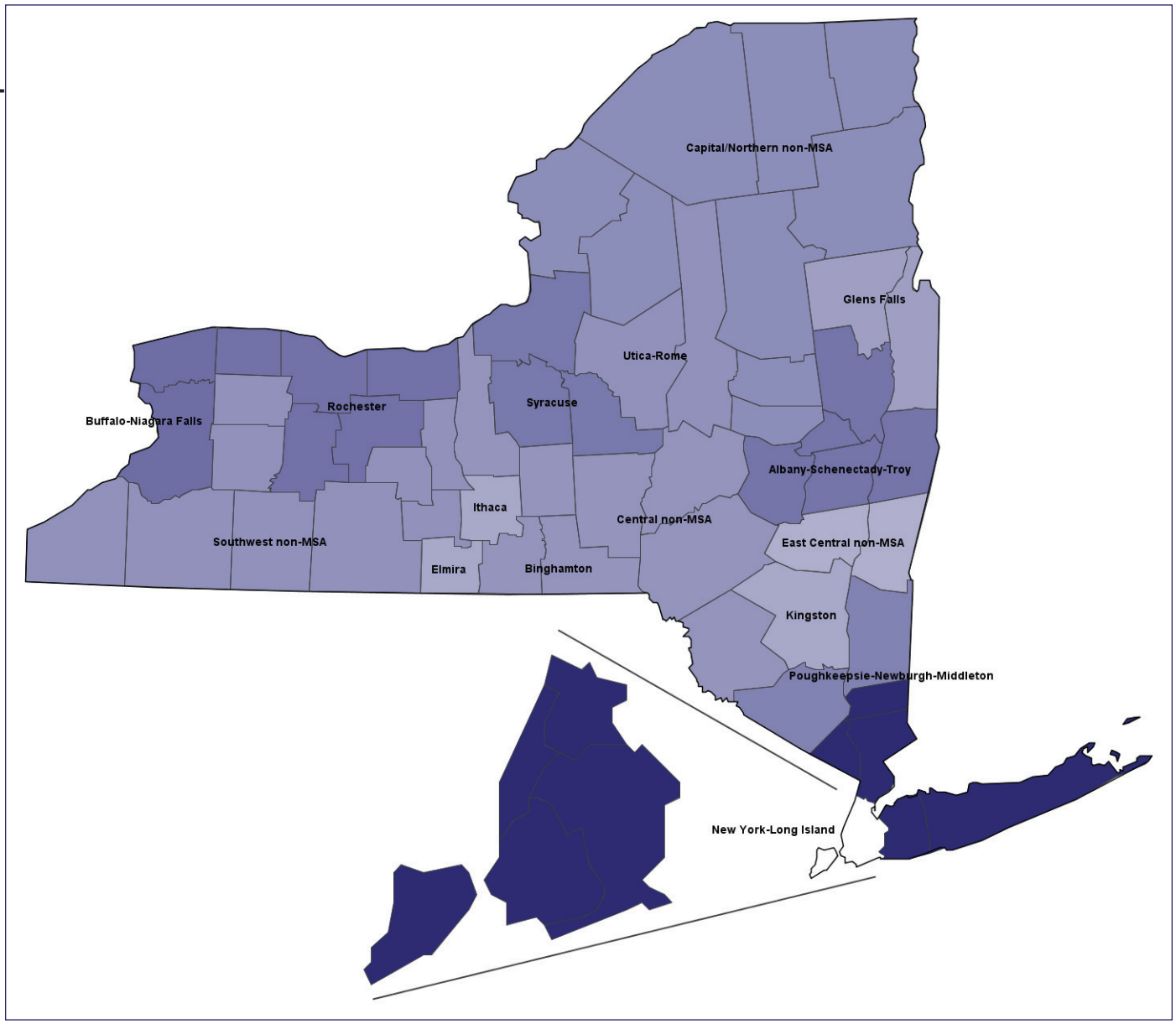
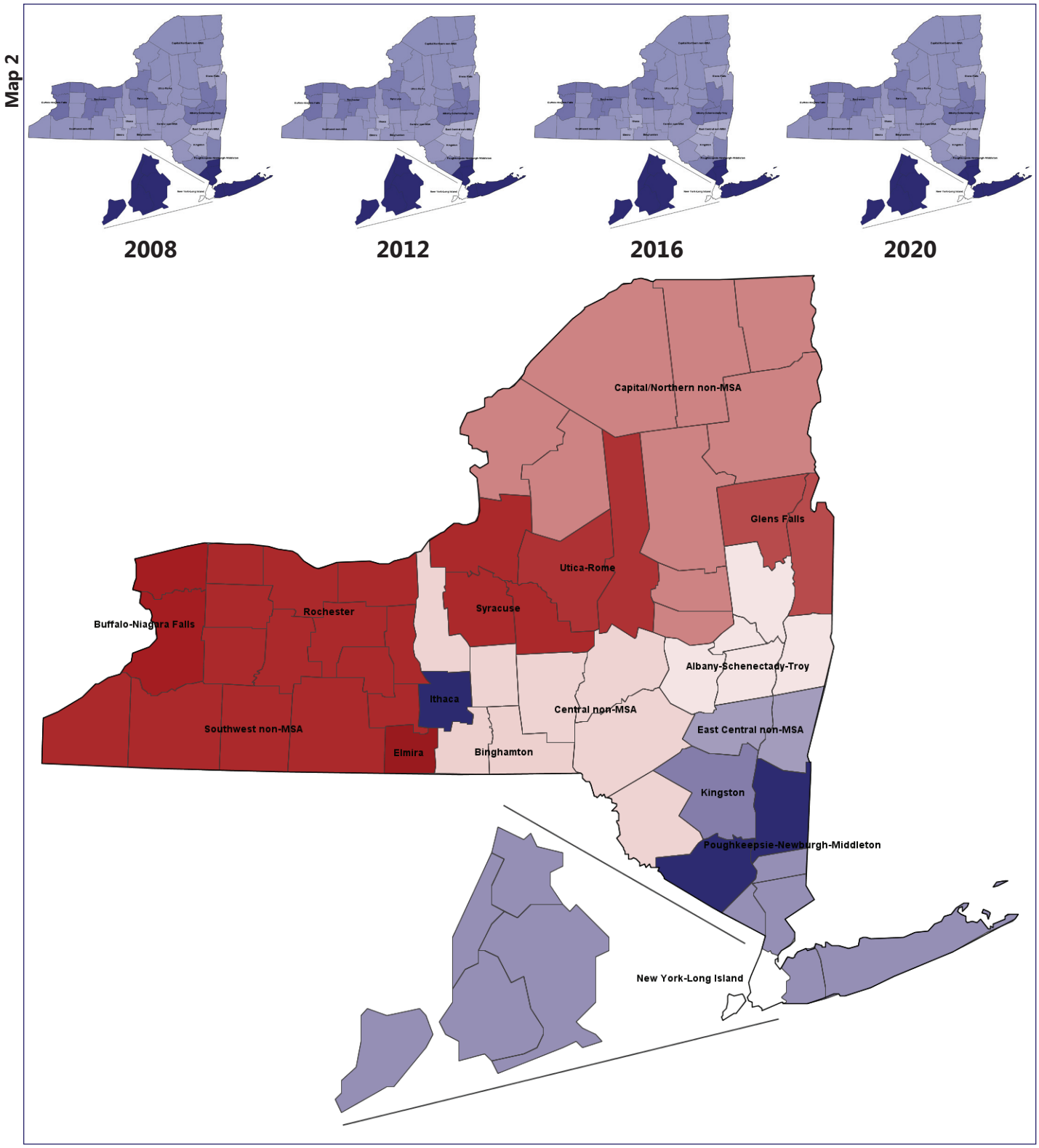
Map 1



Map 1: State of New York Employment Impact by MSA, 2008. Relative share of New York employment impact for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.



Map 2: Change in Share of State of New York Employment Impact by MSA, 2008 - 2020. Percentage change in the relative share of total New York employment impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in the Ithaca MSA (+2.40%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in the Elmira MSA (-3.83%). The four figures at the top display State of New York employment impact by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 10

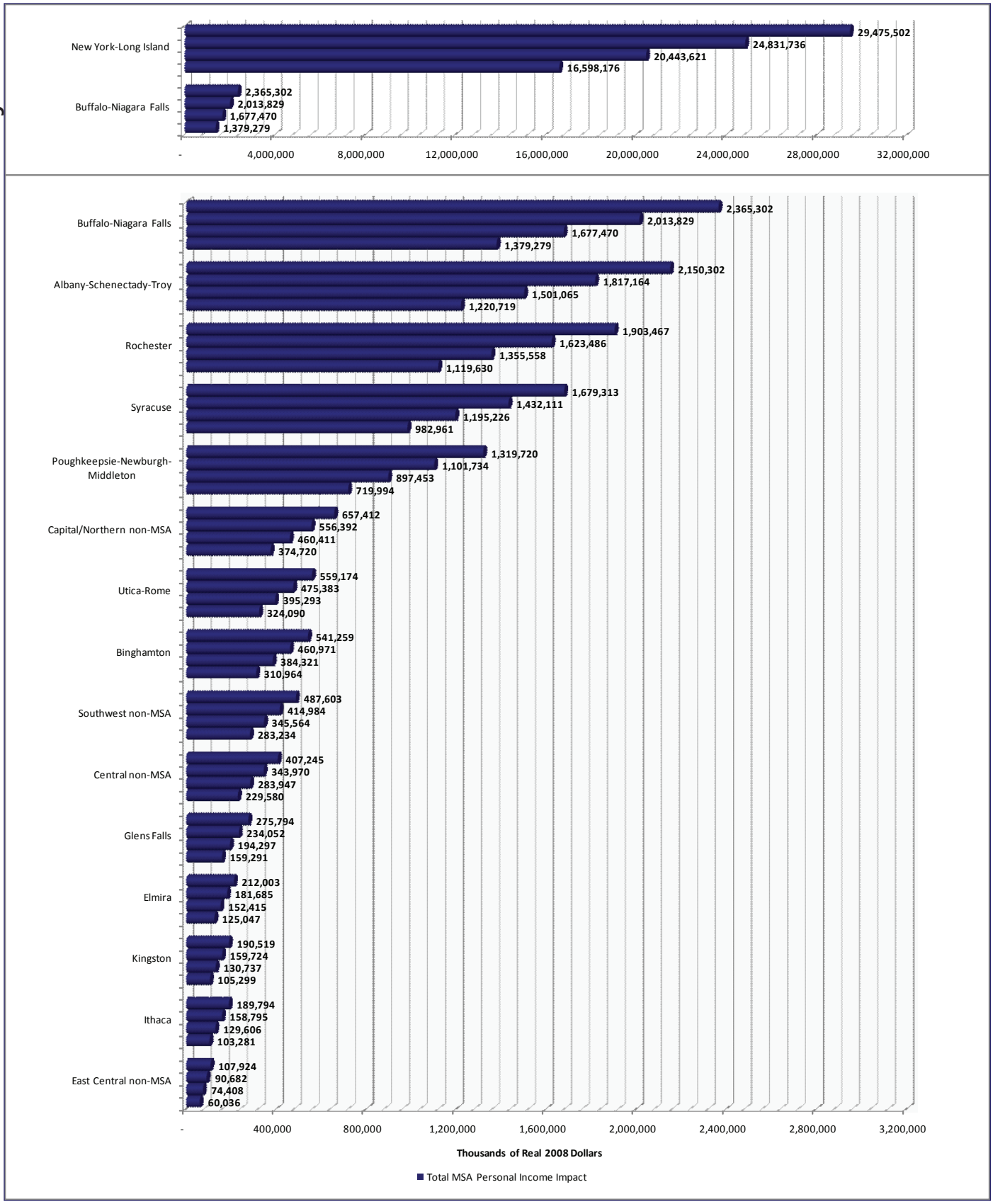


Figure 10: State of New York Personal Income Impact by MSA, 2008 - 2020. Share of total personal income impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s).

New York Local Tax Revenue

The share of NY local tax revenue impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each MSA ranges from $3.087 billion (65.75% of the state total) in the New York-Long Island MSA to $19.748 million (42 hundredths of one percent of the state total) in the East Central non-MSA region. By 2020, these shares of NY local tax revenue impact are projected to increase to $5.493 billion (66.24% of the state total) in the New York-Long Island MSA and 35.226 million (42 hundredths of one percent of the state total) in the East Central non-MSA region. Shares of NY local tax revenue impact due to the Private Practice of Medicine in the State of New York by MSA are listed in Table 8 (page 30), and are displayed in Figure 13 (page 27).

The relative distribution of NY tax revenue impacts for 2008 by MSA is displayed in Map 7 (page 28). By 2020, the largest increase in share of NY tax revenue impact occurs in the Poughkeepsie-Newburgh-Middleton MSA (+3.35%) and the largest decrease occurs in the Rochester MSA (-3.76%). Percentage changes in share of NY tax revenue impact from 2008 to 2020 by MSA are displayed in Map 8 (page 29).

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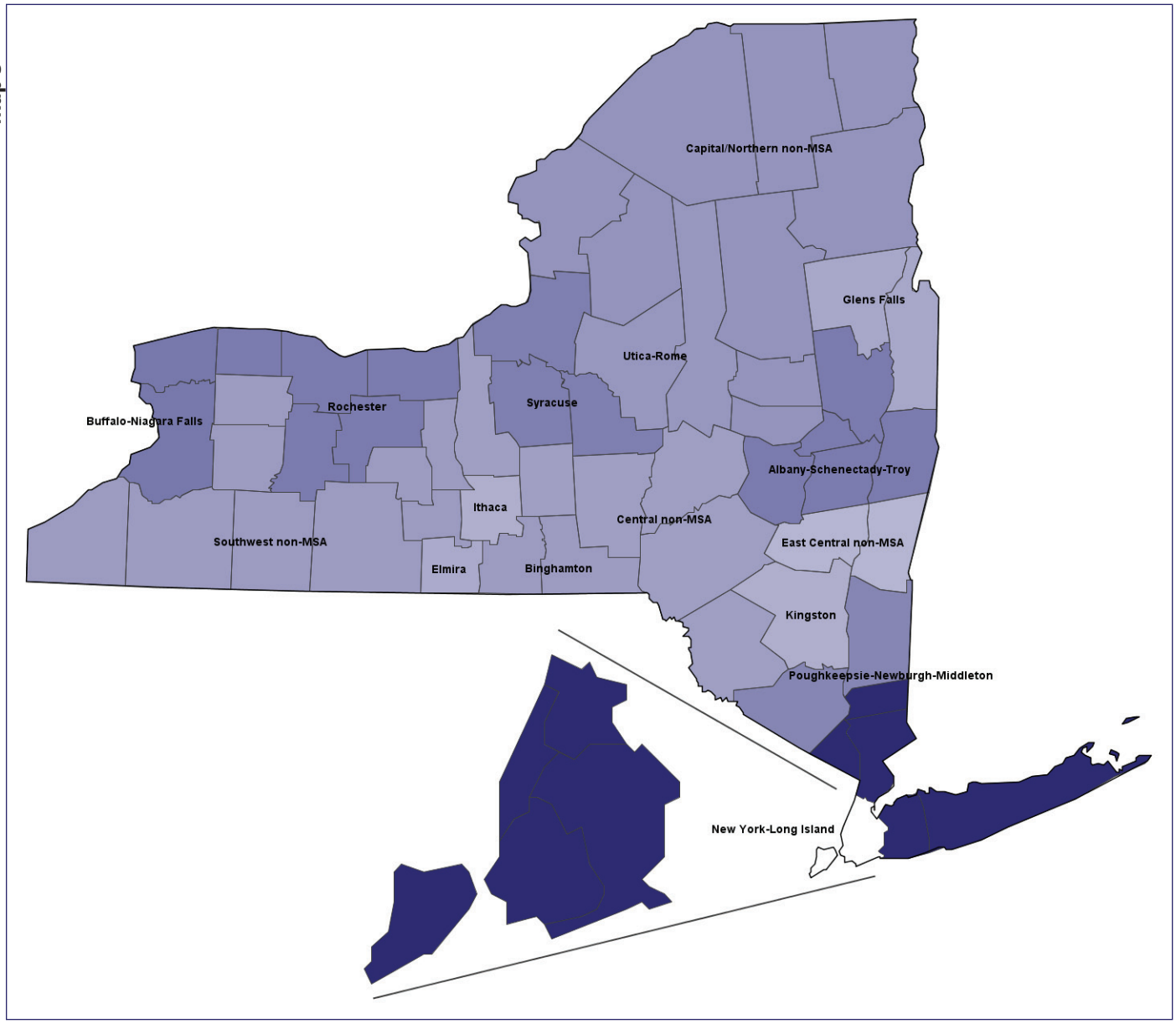
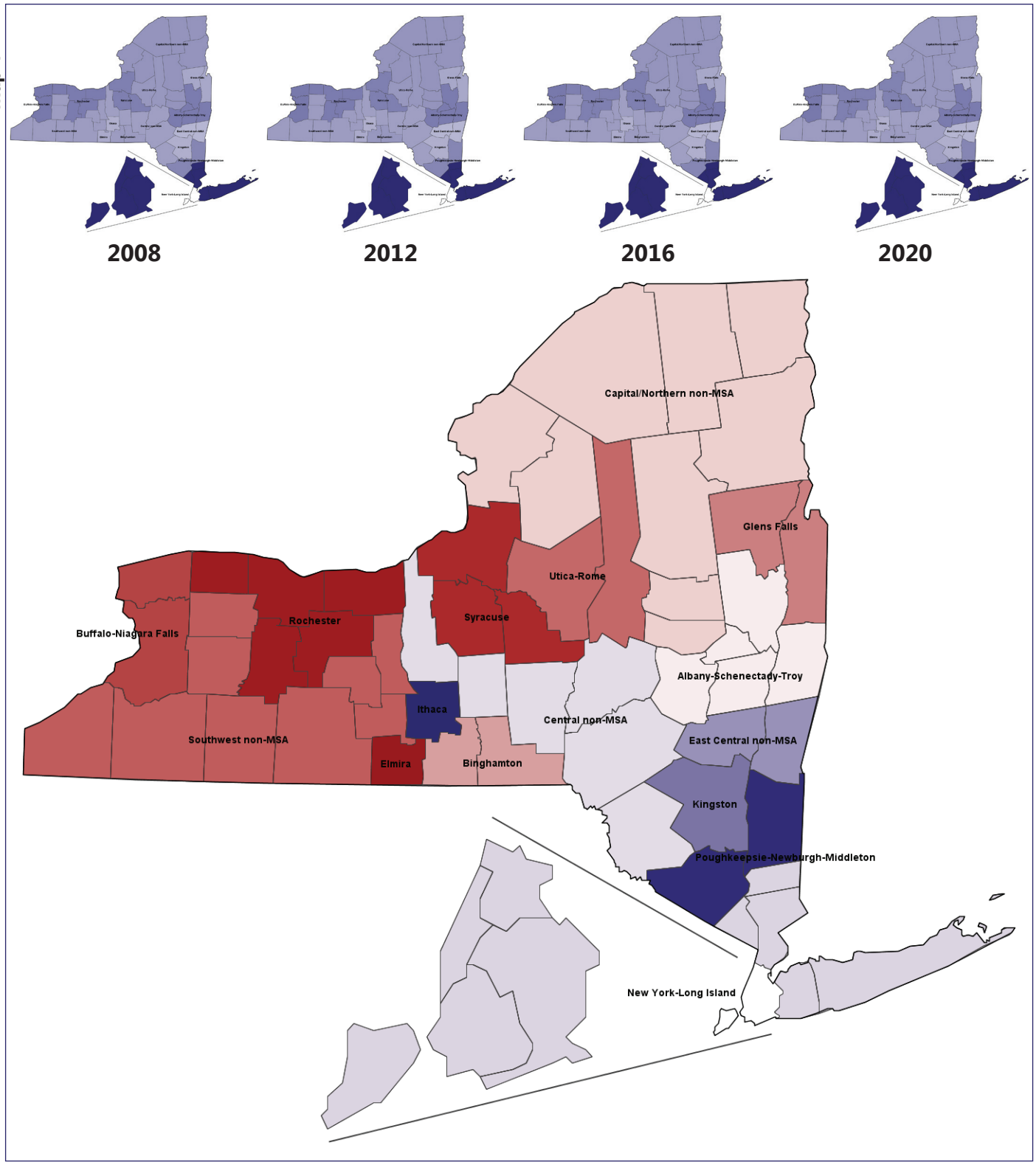
Map 3



Map 3: State of New York Personal Income Impact by MSA, 2008. Relative share of New York personal income impact for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.

Map 4



Map 4: Change in Share of State of New York Personal Income Impact by MSA, 2008 - 2020. Percentage change in the relative share of total New York personal income impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in the Ithaca MSA (+4.13%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in the Elmira MSA (-3.92%). The four figures at the top display State of New York personal income impact by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 11

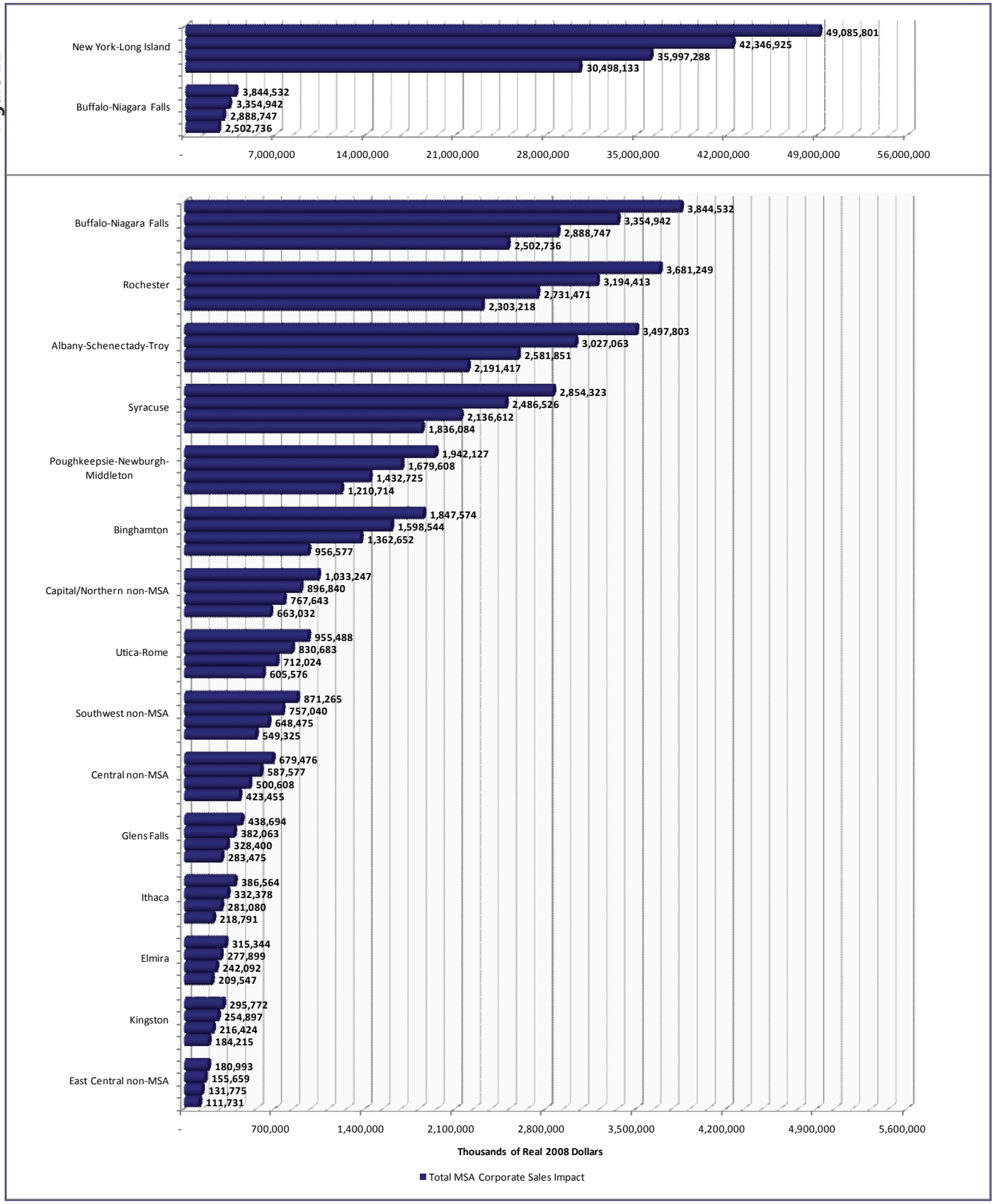
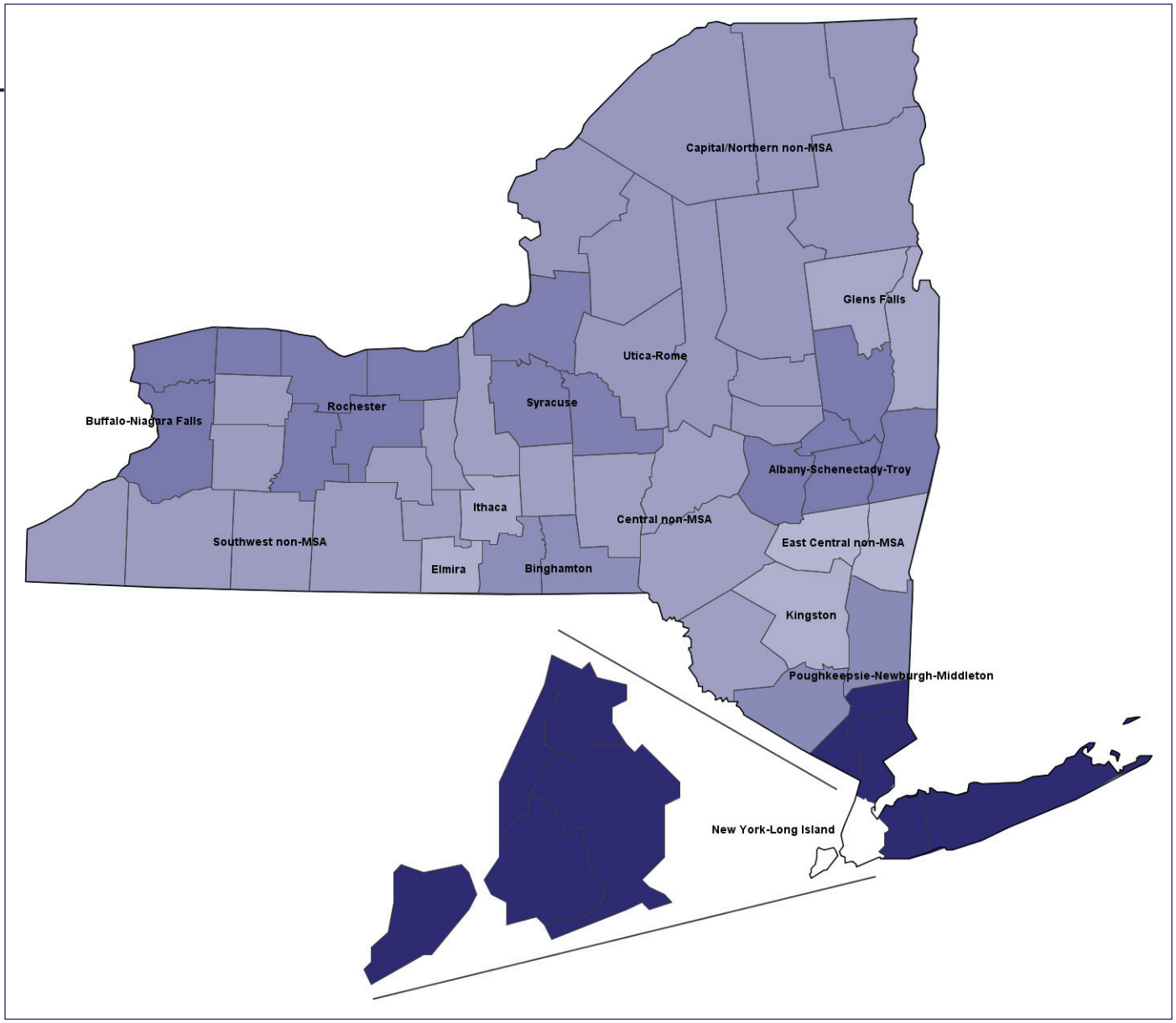
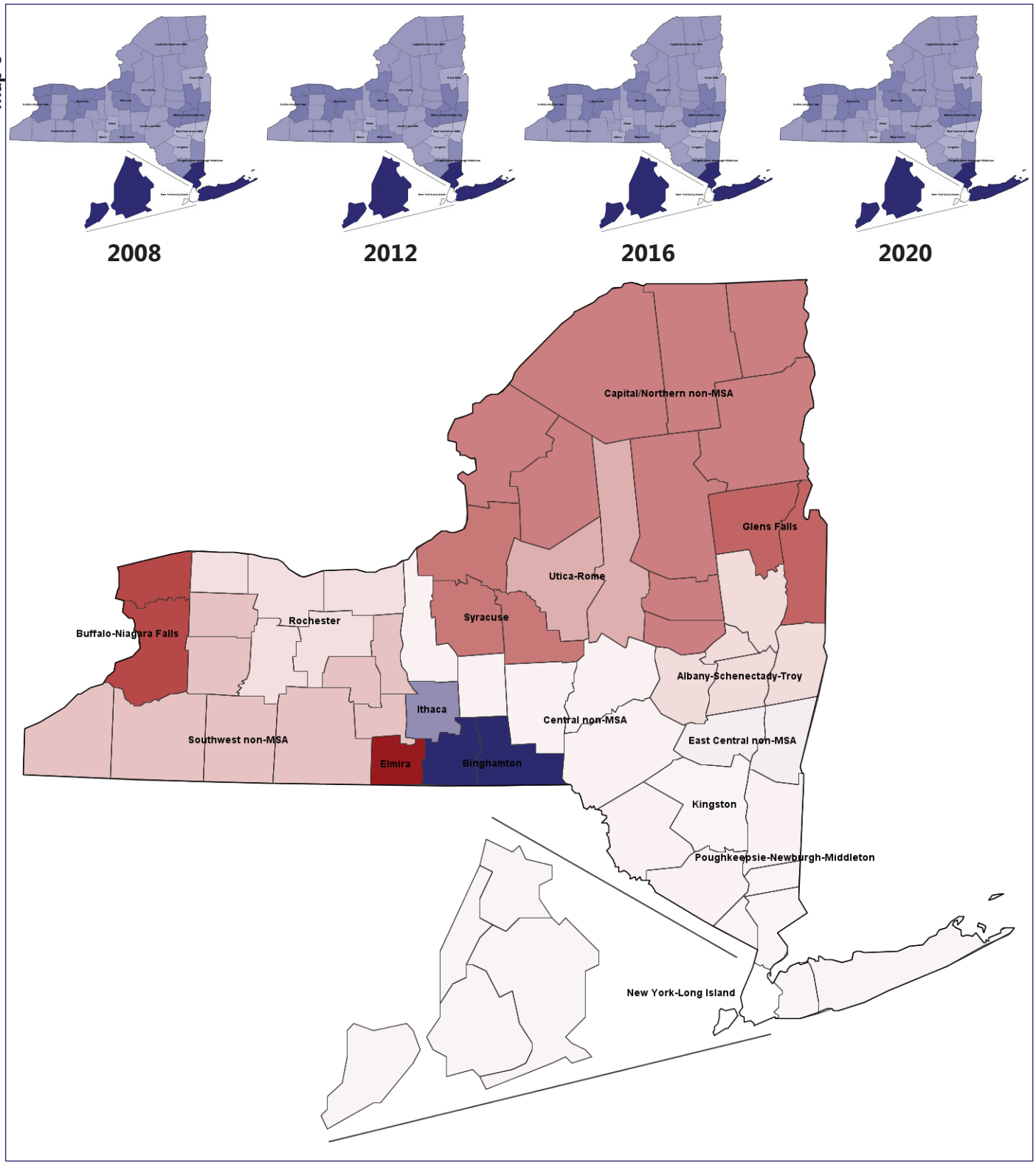


Figure 11: State of New York Corporate Sales Impact by MSA, 2008 - 2020. Share of total corporate sales impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s).

Map 5



Map 5: State of New York Corporate Sales Impact by MSA, 2008. Relative share of New York corporate sales impact for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.



Map 6: Change in Share of State of New York Corporate Sales Impact by MSA, 2008 - 2020. Percentage change in the relative share of total New York corporate sales impact between 2008 and 2020 for each MSA and MSA-equivalent region in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in the Ithaca MSA (+9.94%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in the Elmira MSA (-6.36%). The four figures at the top display State of New York corporate sales impact by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 12

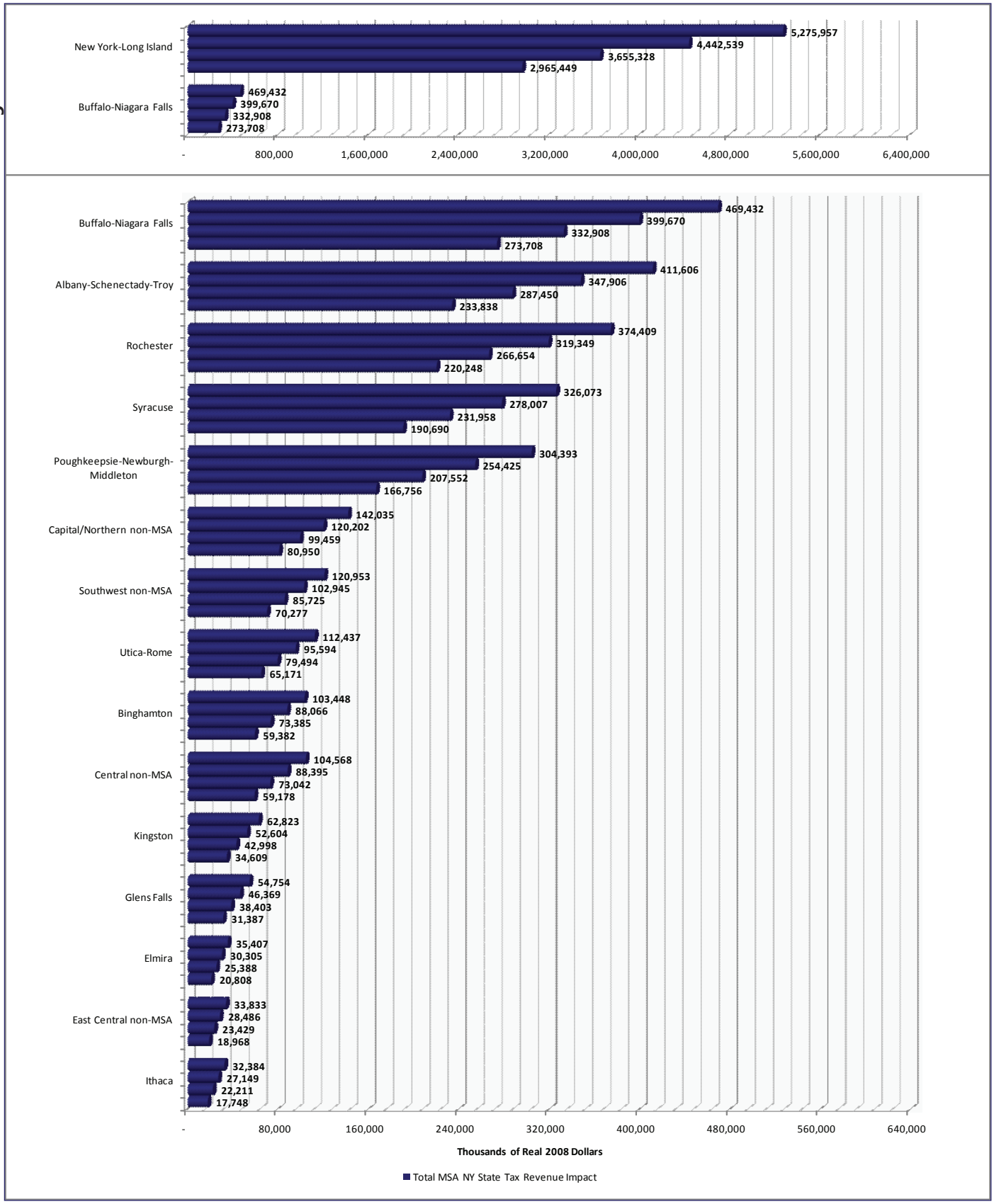


Figure 12: State of New York State Tax Revenue Impact by MSA, 2008 - 2020. Share of New York state tax revenue impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s).

Figure 13

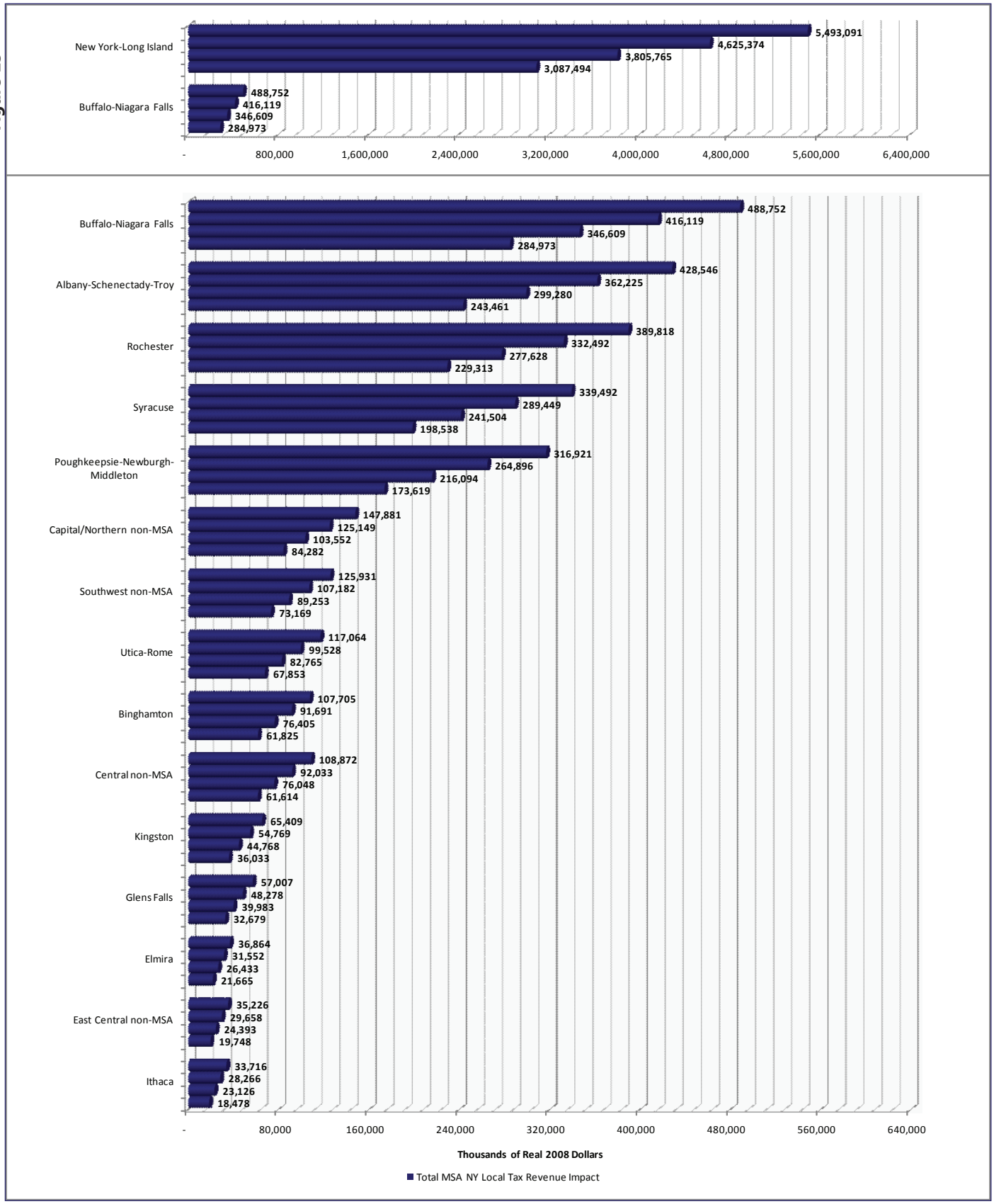
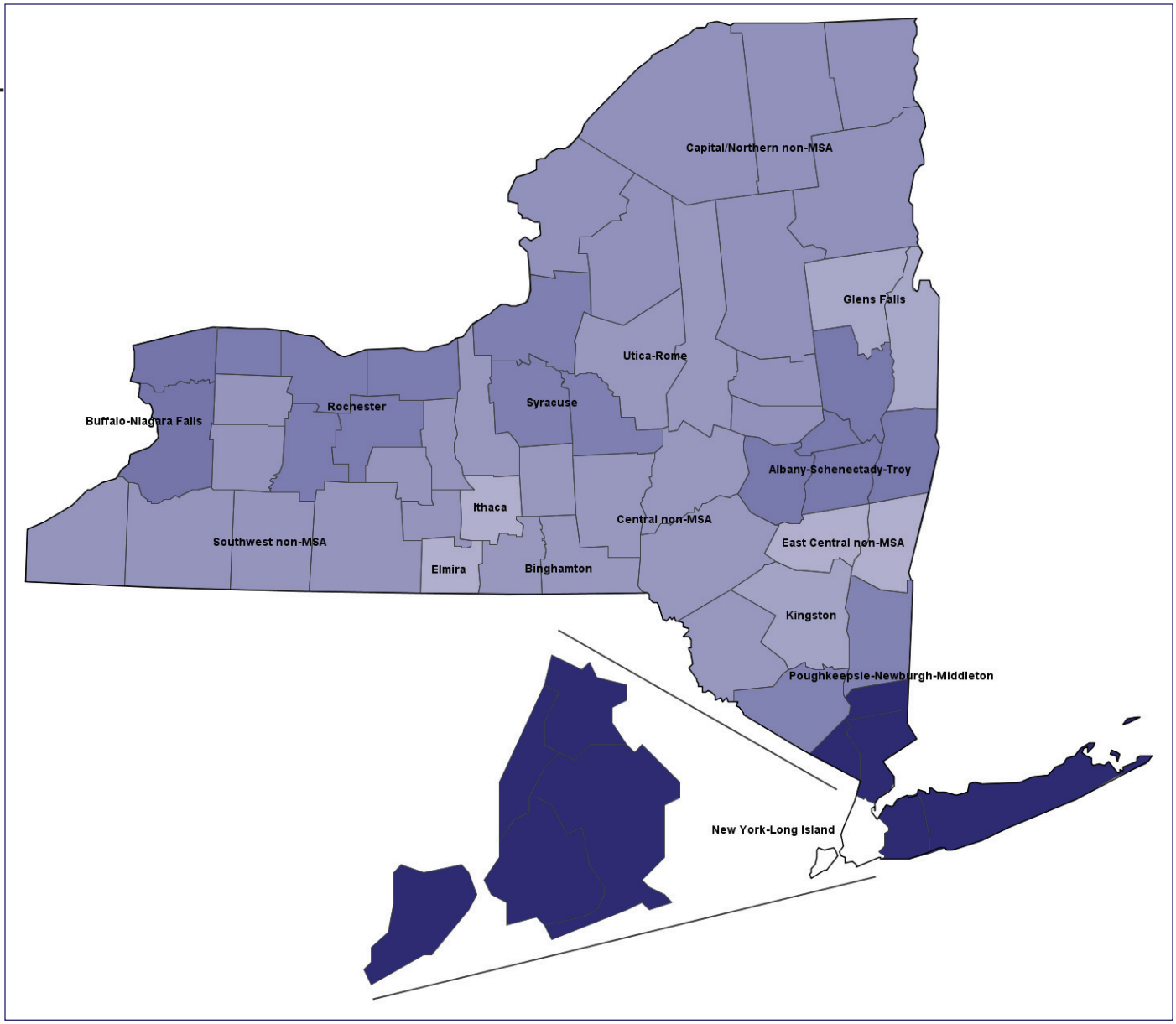
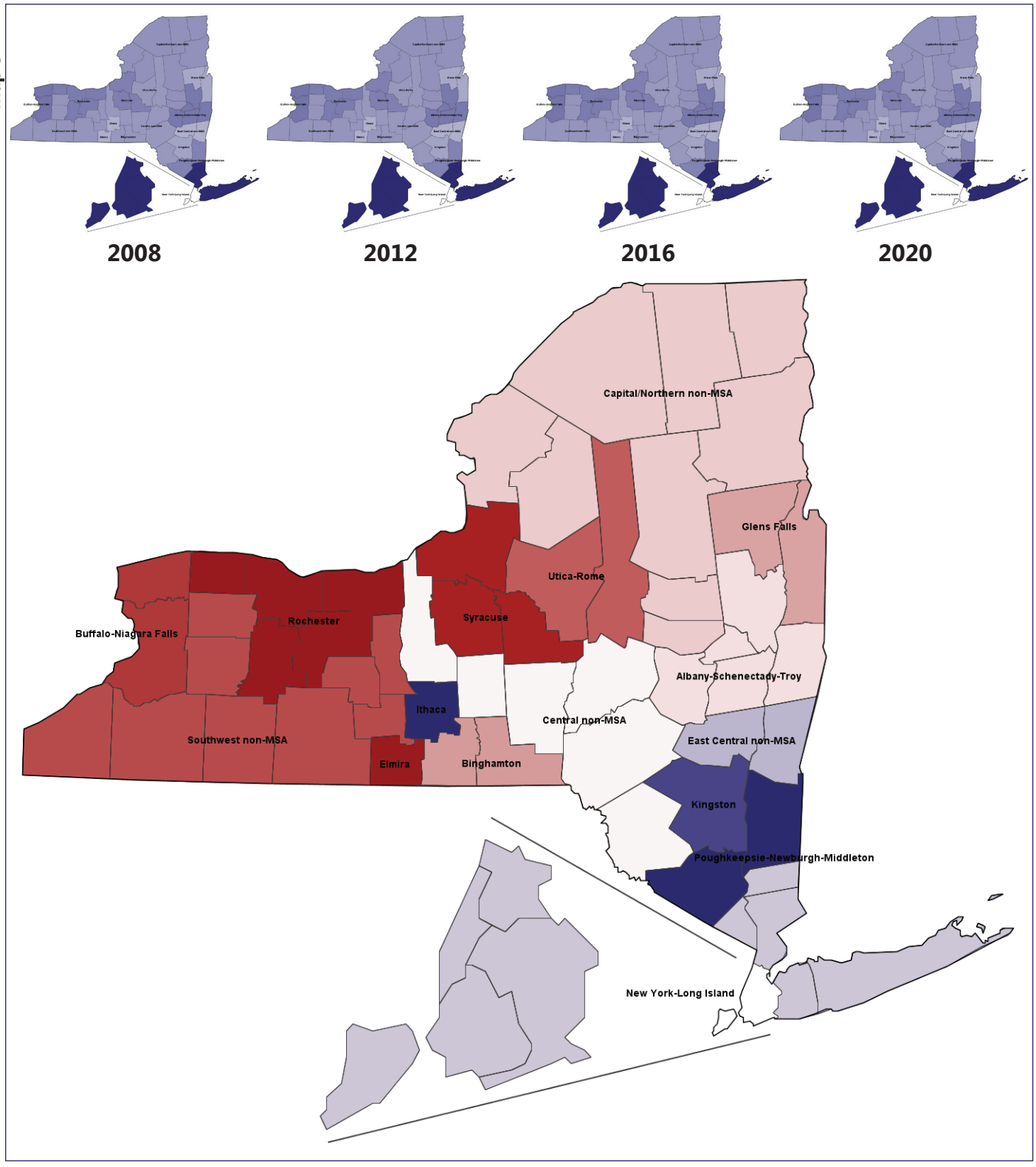


Figure 13: State of New York Local Tax Revenue Impact by MSA, 2008 - 2020. Share of New York local tax revenue impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s).

Map 7



Map 7: State of New York Tax Revenue Impact by MSA, 2008. Relative share of New York tax revenue impact for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.



Map 8: Change in Share of State of New York Tax Revenue Impact by MSA, 2008 - 2020. Percentage change in the relative share of total New York tax revenue impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in the Poughkeepsie-Newburgh-Middleton MSA (+3.35%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in the Rochester MSA (-3.76%). The four figures at the top display State of New York tax revenue impact by MSA for 2008, 2012, 2016, and 2020, as indicated.

Table 8

MSA Name				
Concept	2008	2012	2016	2020
Albany-Schenectady-Troy				
Total Employment	19,717	22,481	25,399	28,201
Total Personal Income	1,220,719	1,501,065	1,817,164	2,150,302
Total Corporate Sales	2,191,417	2,581,851	3,027,063	3,497,803
New York State Tax Revenue	233,838	287,450	347,906	411,606
New York Local Tax Revenue	243,461	299,280	362,225	428,546
Binghamton				
Total Employment	5,064	5,849	6,551	7,221
Total Personal Income	310,964	384,321	460,971	541,259
Total Corporate Sales	956,577	1,362,652	1,598,544	1,847,574
New York State Tax Revenue	59,382	73,385	88,066	103,448
New York Local Tax Revenue	61,825	76,405	91,691	107,705
Buffalo-Niagara Falls				
Total Employment	22,908	25,781	28,844	31,751
Total Personal Income	1,379,279	1,677,470	2,013,829	2,365,302
Total Corporate Sales	2,502,736	2,888,747	3,354,942	3,844,532
New York State Tax Revenue	273,708	332,908	399,670	469,432
New York Local Tax Revenue	284,973	346,609	416,119	488,752
Elmira				
Total Employment	1,946	2,206	2,452	2,684
Total Personal Income	125,047	152,415	181,685	212,003
Total Corporate Sales	209,547	242,092	277,899	315,344
New York State Tax Revenue	20,808	25,388	30,305	35,407
New York Local Tax Revenue	21,665	26,433	31,552	36,864
Glens Falls				
Total Employment	2,878	3,246	3,642	4,020
Total Personal Income	159,291	194,297	234,052	275,794
Total Corporate Sales	283,475	328,400	382,063	438,694
New York State Tax Revenue	31,387	38,403	46,369	54,754
New York Local Tax Revenue	32,679	39,983	48,278	57,007
Ithaca				
Total Employment	2,036	2,354	2,678	2,990
Total Personal Income	103,281	129,606	158,795	189,794
Total Corporate Sales	218,791	281,080	332,378	386,564
New York State Tax Revenue	17,748	22,211	27,149	32,384
New York Local Tax Revenue	18,478	23,126	28,266	33,716
Kingston				
Total Employment	2,132	2,442	2,776	3,098
Total Personal Income	105,299	130,737	159,724	190,519
Total Corporate Sales	184,215	216,424	254,897	295,772
New York State Tax Revenue	34,609	42,998	52,604	62,823
New York Local Tax Revenue	36,033	44,768	54,769	65,409
New York-Long Island				
Total Employment	202,264	231,624	263,046	293,441
Total Personal Income	16,598,176	20,443,621	24,831,736	29,475,502
Total Corporate Sales	30,498,133	35,997,288	42,346,925	49,085,801
New York State Tax Revenue	2,965,449	3,655,328	4,442,539	5,275,957
New York Local Tax Revenue	3,087,494	3,805,765	4,625,374	5,493,091
Poughkeepsie-Newburgh-Middleton				
Total Employment	10,218	11,751	13,399	15,000
Total Personal Income	719,994	897,453	1,101,734	1,319,720
Total Corporate Sales	1,210,714	1,432,725	1,679,608	1,942,127
New York State Tax Revenue	166,756	207,552	254,425	304,393
New York Local Tax Revenue	173,619	216,094	264,896	316,921

Table 8, continued

MSA Name				
Concept	2008	2012	2016	2020
Rochester				
Total Employment	20,180	22,728	25,449	28,037
Total Personal Income	1,119,630	1,355,558	1,623,486	1,903,467
Total Corporate Sales	2,303,218	2,731,471	3,194,413	3,681,249
New York State Tax Revenue	220,248	266,654	319,349	374,409
New York Local Tax Revenue	229,313	277,628	332,492	389,818
Syracuse				
Total Employment	15,497	17,487	19,567	21,541
Total Personal Income	982,961	1,195,226	1,432,111	1,679,313
Total Corporate Sales	1,836,084	2,136,612	2,486,526	2,854,323
New York State Tax Revenue	190,690	231,958	278,007	326,073
New York Local Tax Revenue	198,538	241,504	289,449	339,492
Utica-Rome				
Total Employment	6,092	6,869	7,694	8,477
Total Personal Income	324,090	395,293	475,383	559,174
Total Corporate Sales	605,576	712,024	830,683	955,488
New York State Tax Revenue	65,171	79,494	95,594	112,437
New York Local Tax Revenue	67,853	82,765	99,528	117,064
Capital/Northern non-MSA				
Total Employment	7,309	8,286	9,314	10,297
Total Personal Income	374,720	460,411	556,392	657,412
Total Corporate Sales	663,032	767,643	896,840	1,033,247
New York State Tax Revenue	80,950	99,459	120,202	142,035
New York Local Tax Revenue	84,282	103,552	125,149	147,881
East Central non-MSA				
Total Employment	1,273	1,458	1,654	1,844
Total Personal Income	60,036	74,408	90,682	107,924
Total Corporate Sales	111,731	131,775	155,659	180,993
New York State Tax Revenue	18,968	23,429	28,486	33,833
New York Local Tax Revenue	19,748	24,393	29,658	35,226
Central non-MSA				
Total Employment	4,878	5,577	6,283	6,959
Total Personal Income	229,580	283,947	343,970	407,245
Total Corporate Sales	423,455	500,608	587,577	679,476
New York State Tax Revenue	59,178	73,042	88,395	104,568
New York Local Tax Revenue	61,614	76,048	92,033	108,872
Southwest non-MSA				
Total Employment	6,203	7,000	7,831	8,622
Total Personal Income	283,234	345,564	414,984	487,603
Total Corporate Sales	549,325	648,475	757,040	871,265
New York State Tax Revenue	70,277	85,725	102,945	120,953
New York Local Tax Revenue	73,169	89,253	107,182	125,931

Table 8: State of New York Economic Impacts by MSA, 2008 - 2020. Total Employment, Total Personal Income, Total Corporate Sales, New York State Tax Revenue, and New York Local Tax Revenue during years 2008, 2012, 2016, and 2020 for each MSA and MSA-equivalent in the State of New York. Employment is reported in Full-Time Equivalents (FTE), and all other values are reported in thousands of real 2008 dollars ($1,000s).

Impacts at the County Level

Share of economic impacts of the Private Practice of Medicine in the State of New York at the county level is reported in somewhat less detail than share of economic impacts by MSA. This is primarily due to the unreasonable length of county-level concept-specific figures for each of the five core concepts – each would be four pages long – that correspond to the MSA-level concept-specific figures that are presented in the previous section. However the same level of detail is available in county-level Table 9: State of New York Economic Impacts by County, 2008 - 2020 (page 41) as is available in MSA-level Table 8: State of New York Economic Impacts by MSA, 2008 - 2020 (page 30).

Total Employment

The share of total employment impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each county ranges from 58,066 (17.56% of the state total) in New York County to 35 (one hundredth of one percent of the state total) in Hamilton County. By 2020, these shares of total employment impact are projected to increase to 82,393 (17.38% of the state total) in New York County and 50 (one hundredth of one percent of the state total) in Hamilton County. Shares of total employment impact due to the Private Practice of Medicine in the State of New York by County are listed in Table 9 (page 41).

The relative distribution of total employment impact for 2008 by county is displayed in Map 9 (page 33). By 2020, the largest increase in share of total employment impact occurs in Putnam County (+6.11%) and the largest decrease occurs in Washington County (-5.01%). Percentage changes in share of total employment impact from 2008 to 2020 by county are displayed in Map 10 (page 34).

Total Personal Income

The share of total personal income impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each county ranges from $6.073 billion (25.20% of the state total) in New York County to $778 thousand (3 thousandths of one percent of the state total) in Hamilton County. By 2020, these shares of total personal income impact are projected to increase to $10.340 billion (24.32% of the state total) in New York County and $1.361 million (3 thousandths of one percent of the state total) in Hamilton County. Shares of total personal income impact due to the Private Practice of Medicine in the State of New York by County are listed in Table 9 (page 41).

The relative distribution of total personal income impact for 2008 by county is displayed in Map 11 (page 35). By 2020, the largest increase in share of total personal income impact occurs in Putnam County (+8.05%) and the largest decrease occurs in Washington County (-5.89%). Percentage changes in share of total personal income impact from 2008 to 2020 by county are displayed in Map 12 (page 36).

Total Corporate Sales

The share of total corporate sales impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each county ranges from $12.238 billion (27.35% of the state total) in New York County to $1.610 million (4 thousandths of one percent of the state total) in Hamilton County. By 2020, these shares of total corporate sales impact are projected to increase to $19.809 billion (27.55% of the state total) in New York County and $2.748 million (4 thousandths of one percent of the state total) in Hamilton County. Shares of total corporate sales impact due to the Private Practice of Medicine in the State of New York by County are listed in Table 9 (page 41).

The relative distribution of total corporate sales impact for 2008 by county is displayed in Map 13 (page 37). By 2020, the largest increase in share of total corporate sales impact occurs in Broome County (+21.22%) and the largest decrease occurs in Chemung County (-6.36%). Percentage changes in share of total corporate sales impact from 2008 to 2020 by county are displayed in Map 14 (page 38).

New York State Tax Revenue

The share of NY state tax revenue impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each county ranges from $499.074 million

(11.07% of the state total) in New York County to $438 thousand (one hundredth of one percent of the state total) in Hamilton County. By 2020, these shares of NY state tax revenue impact are projected to increase to $857.462 million (10.77% of the state total) in New York County and $770 thousand (one hundredth of one percent of the state total) in Hamilton County. Shares of NY state tax revenue impact due to the Private Practice of Medicine in the State of New York by County are listed in Table 9 (page 41).

New York Local Tax Revenue

The share of NY local tax revenue impact due to the Private Practice of Medicine in the State of New York for 2008 that occurs in each county ranges from $519.614 million (11.07% of the state total) in New York County to $456 thousand (one hundredth of one percent of the state total) in Hamilton County. By 2020, these shares of NY local tax revenue impact are projected to increase to $892.751 million (10.77% of the state total) in New York County and $801 thousand (one hundredth of one percent of the state

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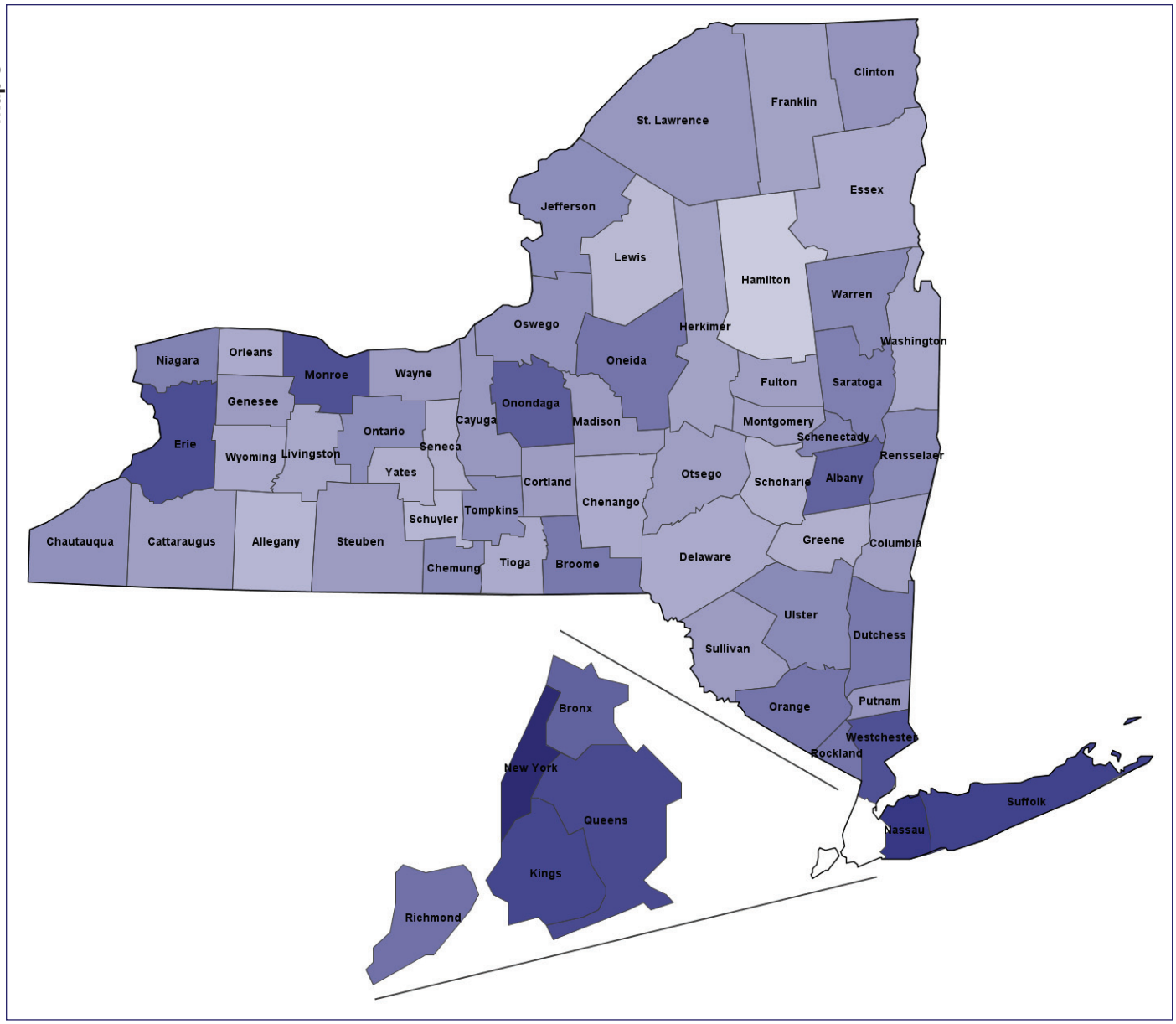
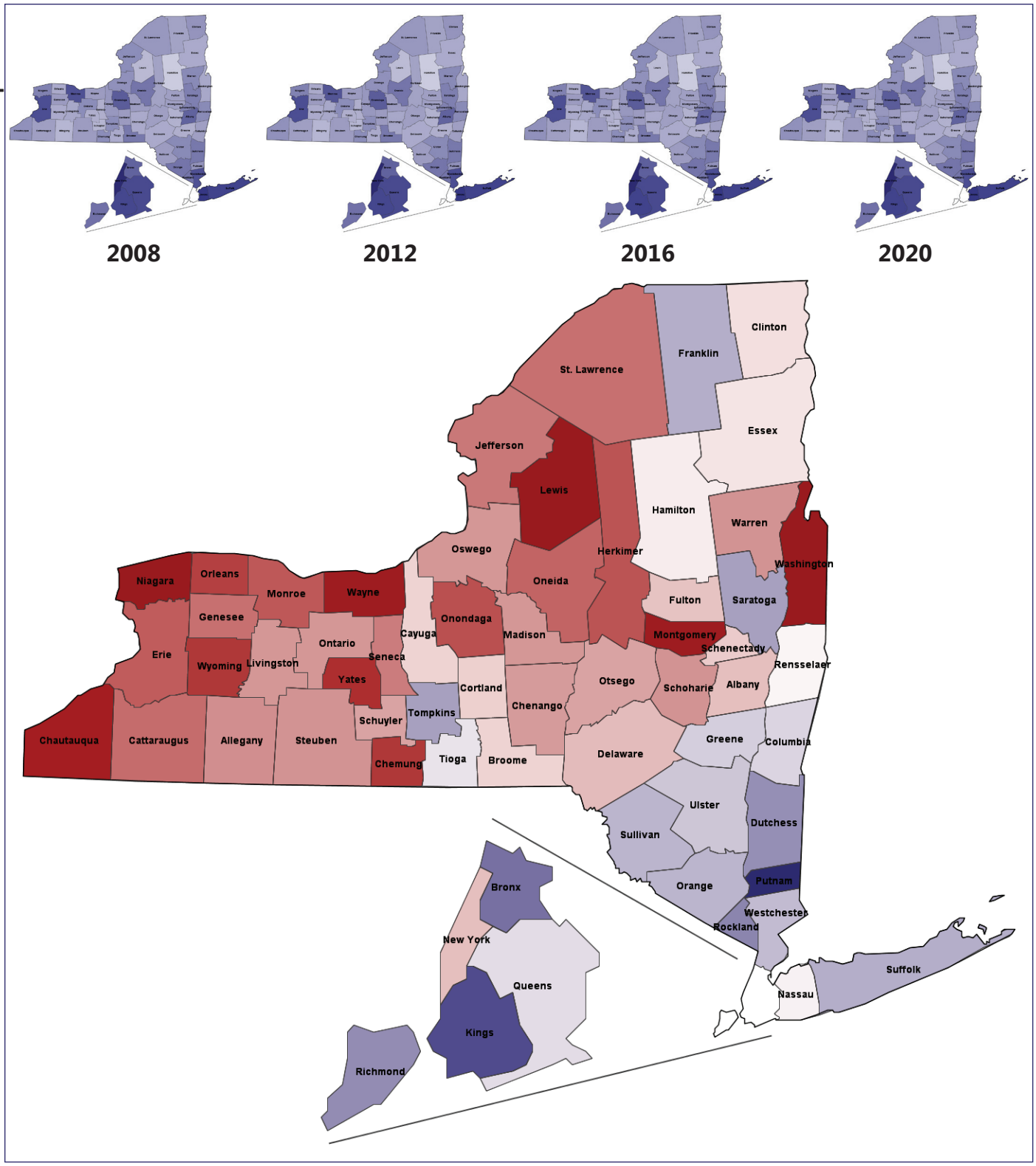
Map 9



Map 9: State of New York Employment Impact by County, 2008. Relative share of New York employment impact for each county in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.

Map 10



Map 10: Change in Share of State of New York Employment Impact by County, 2008 - 2020. Percentage change in the relative share of total New York employment impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in Putnam County (+6.11%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in Washington County (-5.01%). The four figures at the top display State of New York employment impact by county for 2008, 2012, 2016, and 2020, as indicated.

total) in Hamilton County. Shares of NY local tax revenue impact due to the Private Practice of Medicine in the State of New York by County are listed in Table 9 (page 41).

The relative distribution of NY tax revenue impact for 2008 by county is displayed in Map 15 (page 39). By 2020, the largest increase in share of NY tax revenue impact occurs in Putnam County (+3.97%) and the largest decrease occurs in Niagara County (-4.37%). Percentage changes in share of NY tax revenue impact from 2008 to 2020 by county are displayed in Map 16 (page 40).

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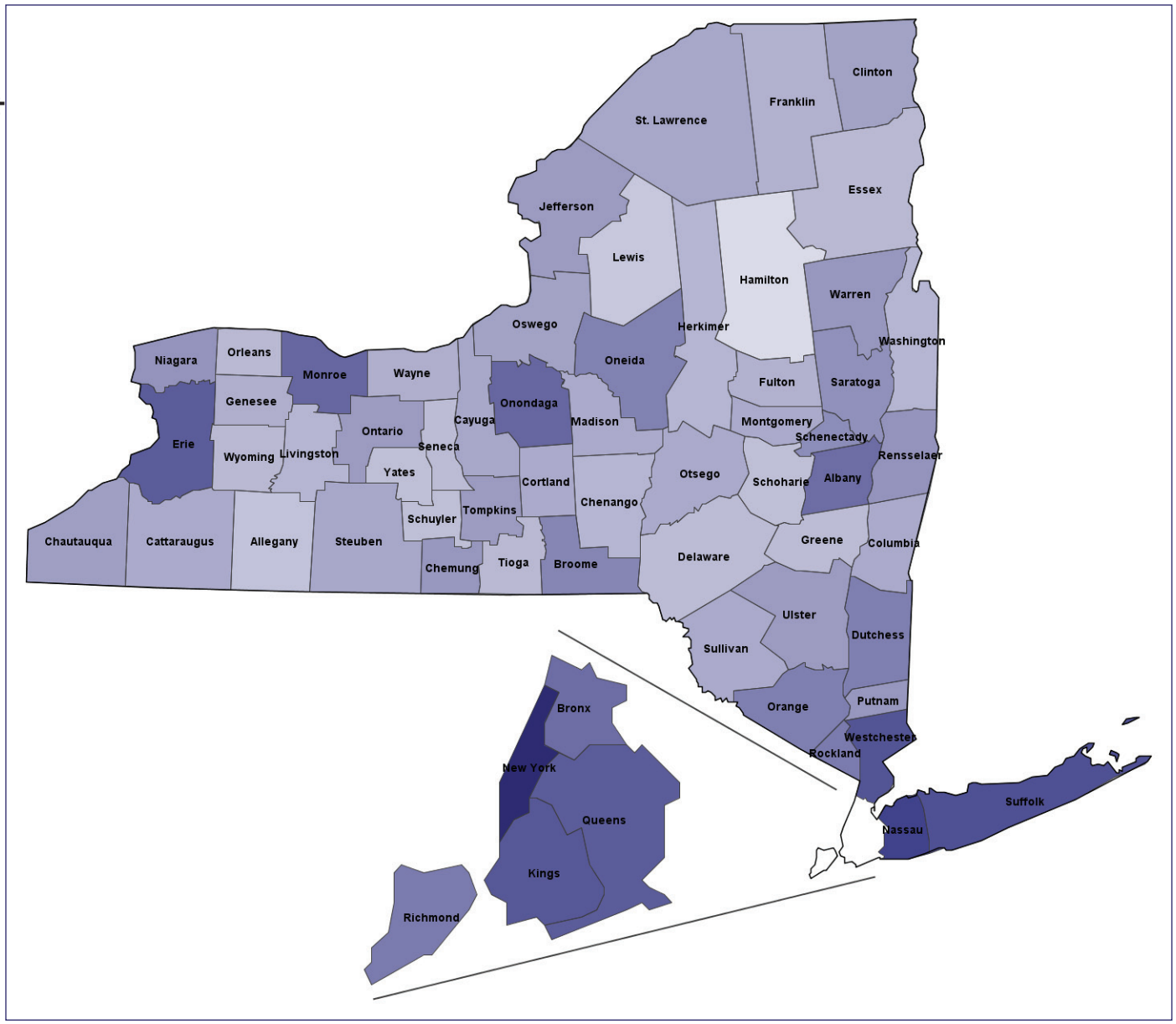
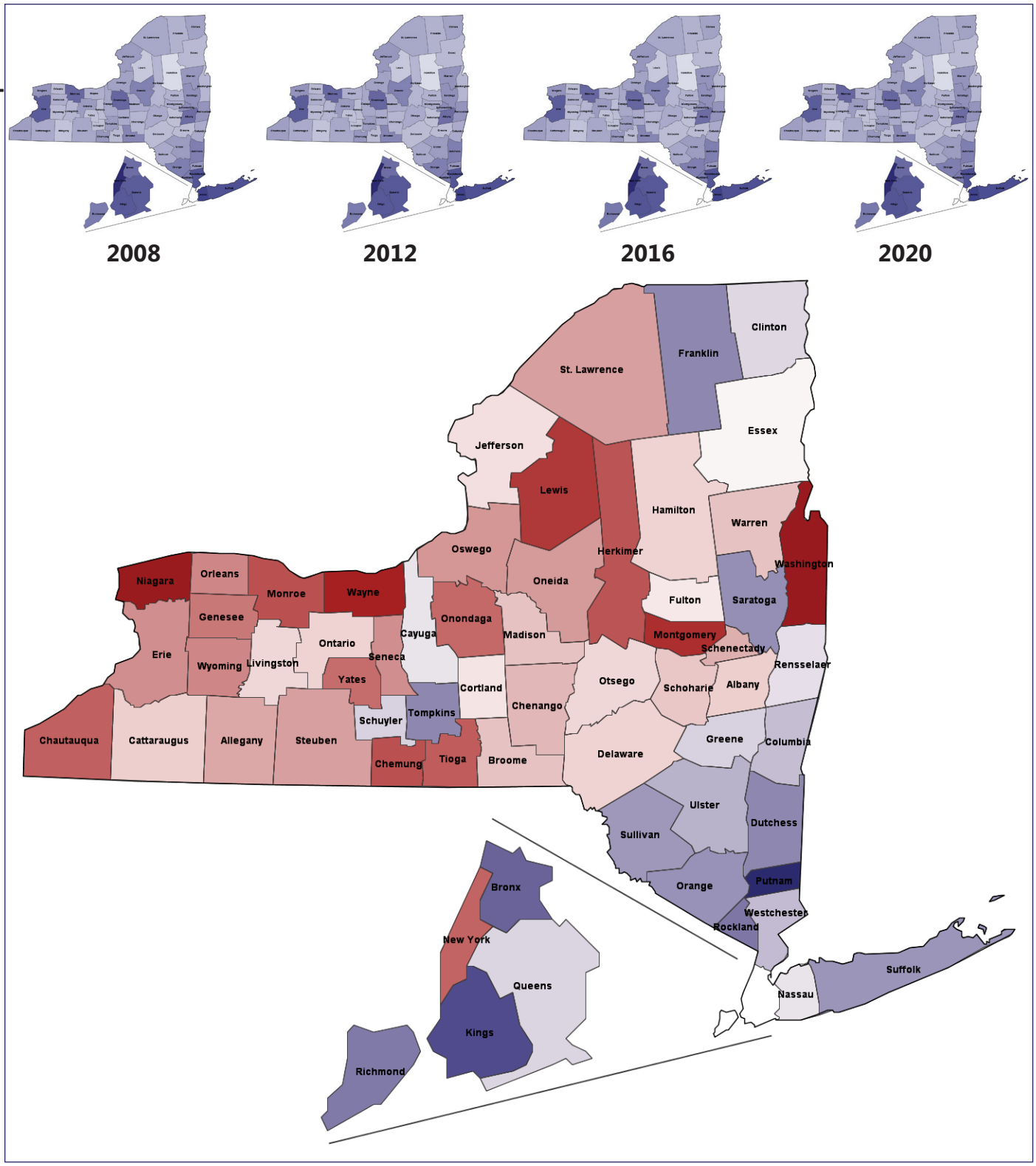
Map 11



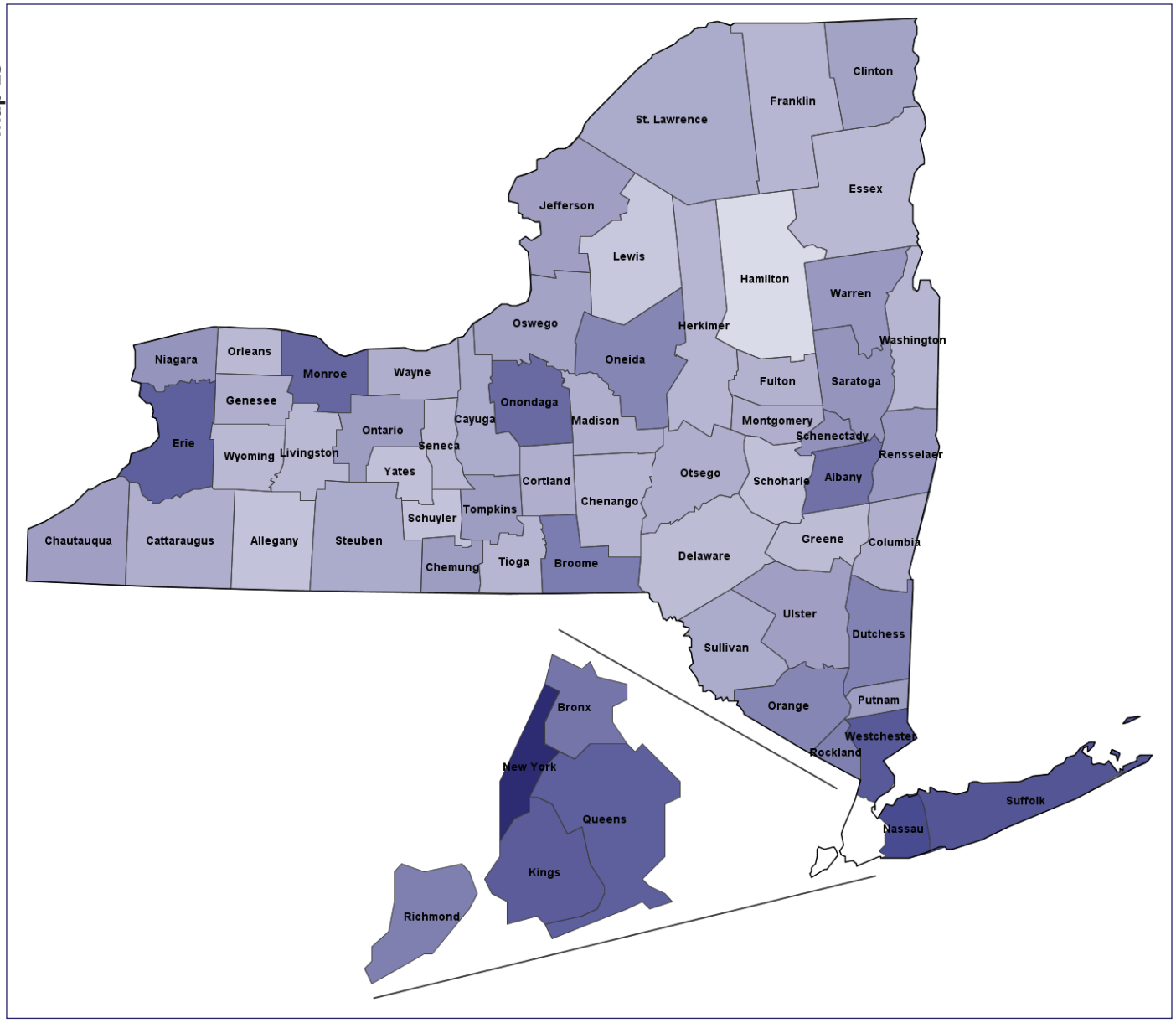
Map 11: State of New York Personal Income Impact by County, 2008. Relative share of New York personal income impact for each county in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.

Map 12



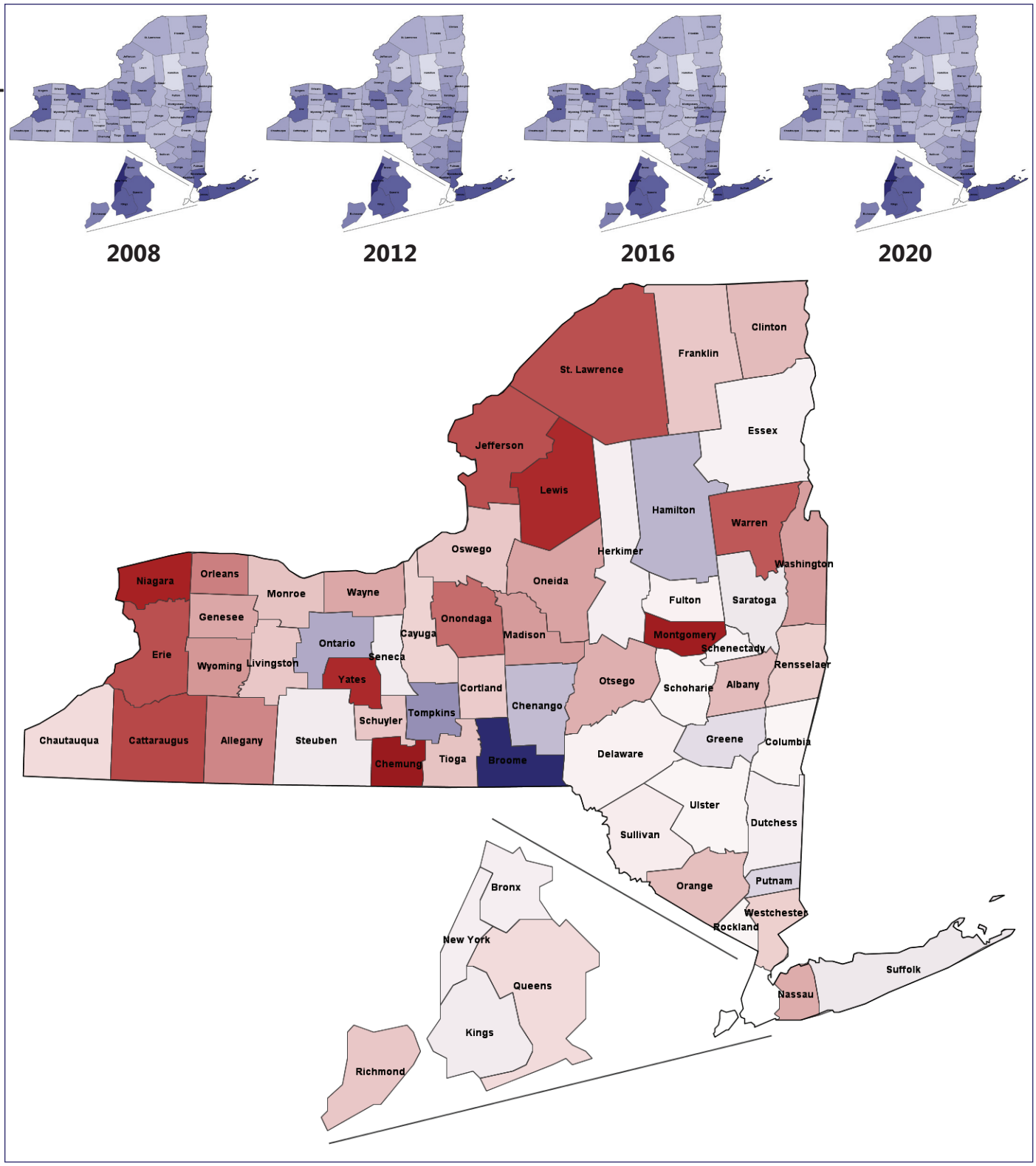
Map 12: Change in Share of State of New York Personal Income Impact by County, 2008 - 2020. Percentage change in the relative share of total New York personal income impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in Putnam County (+8.05%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in Washington County (-5.89%). The four figures at the top display State of New York personal income impact by county for 2008, 2012, 2016, and 2020, as indicated.

Map 13



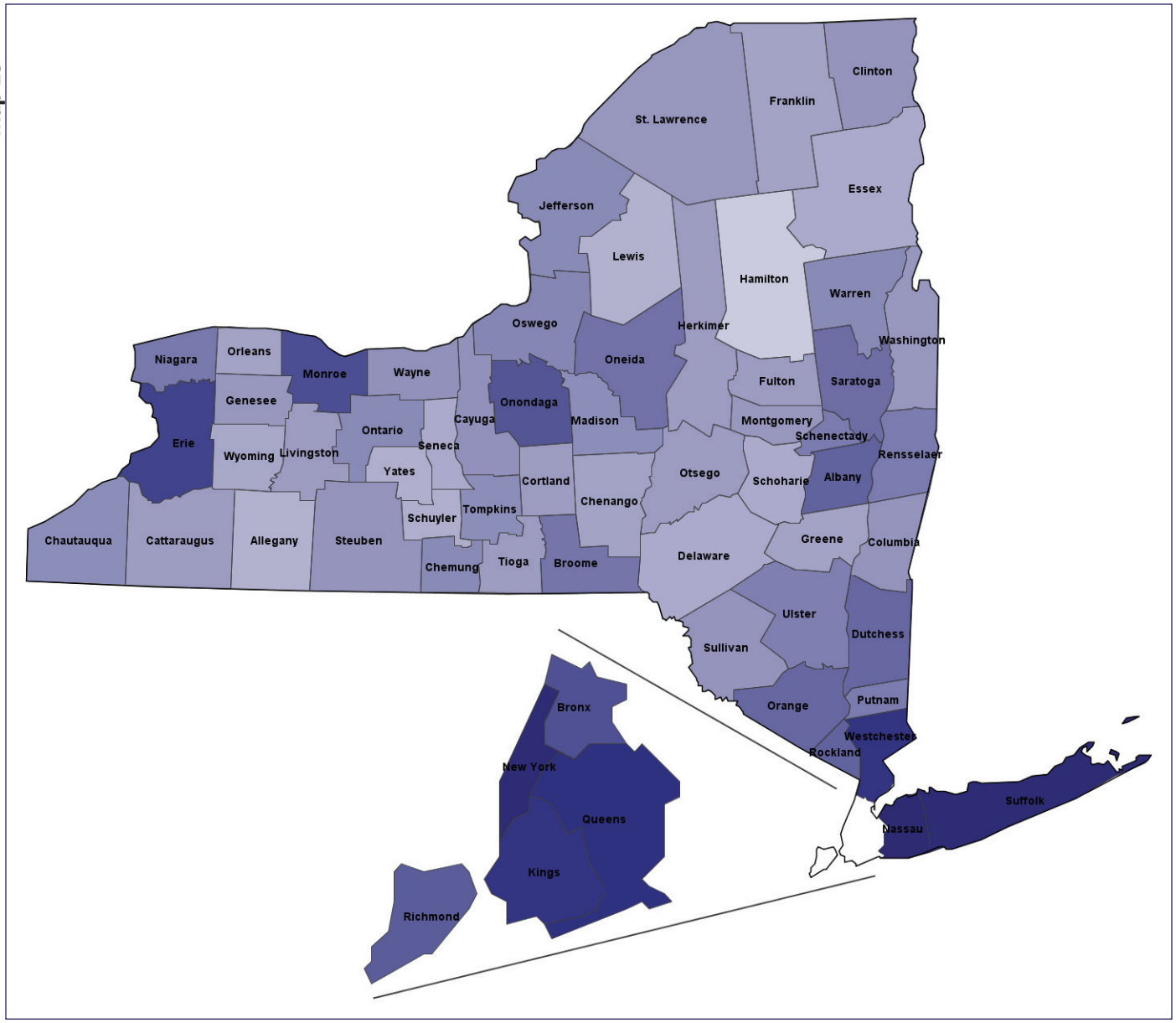
Map 13: State of New York Corporate Sales Impact by County, 2008. Relative share of New York corporate sales impact for each county in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.

Map 14



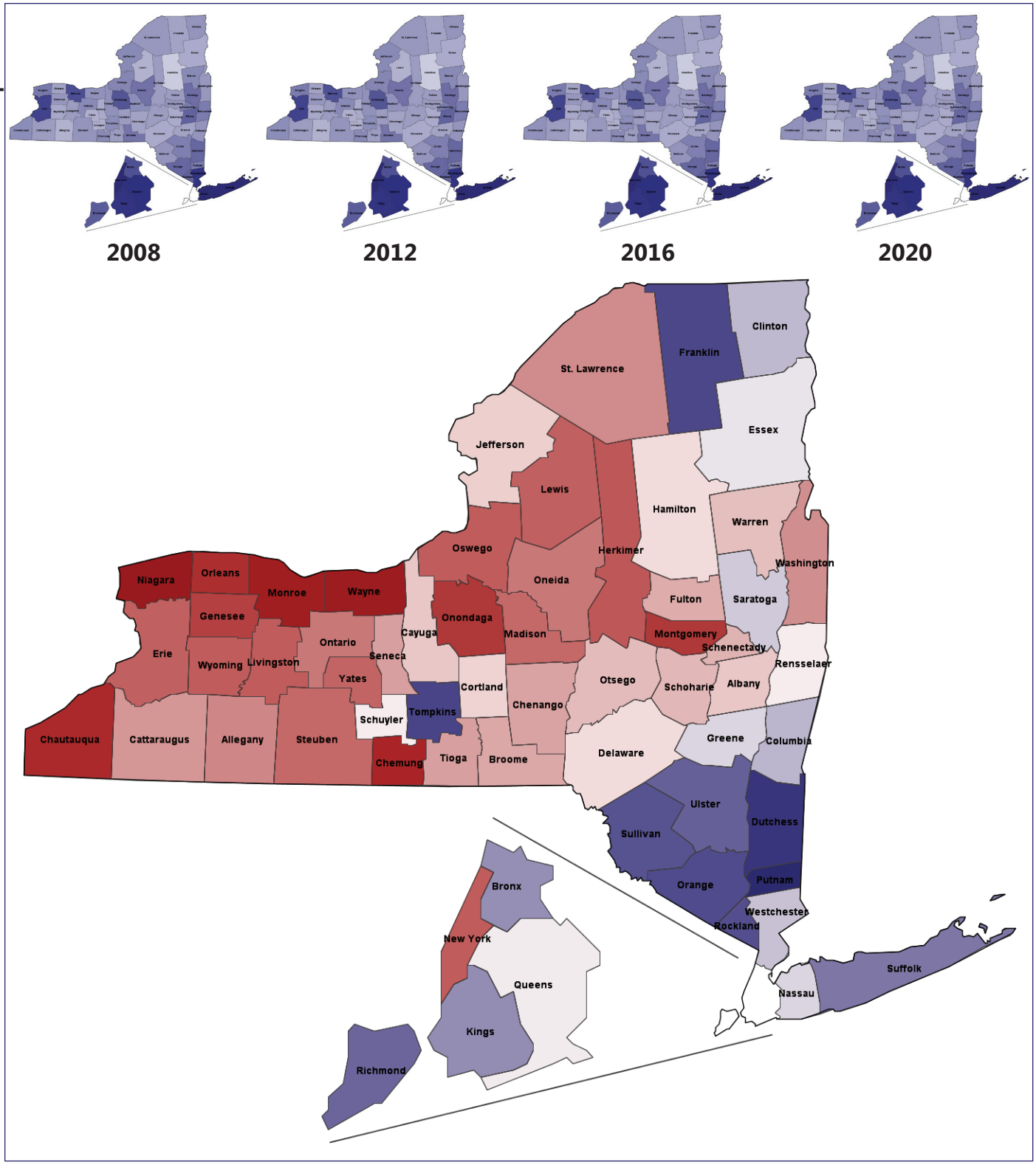
Map 14: Change in Share of State of New York Corporate Sales Impact by County, 2008 - 2020. Percentage change in the relative share of total New York corporate sales impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in Broome County (+21.22%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in Chemung County (-6.36%). The four figures at the top display State of New York corporate sales impact by county for 2008, 2012, 2016, and 2020, as indicated.

Map 15



Map 15: State of New York Tax Revenue Impact by County, 2008. Relative share of New York tax revenue impact for each county in the State of New York. Darker blue indicates relatively larger share of total State of New York impact.

Map 16



Map 16: Change in Share of State of New York Tax Revenue Impact by County, 2008 - 2020. Percentage change in the relative share of New York tax revenue impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage share, with the largest increase occurring in Putnam County (+3.97%). Darker red indicates larger decreases in relative percentage share, with the largest decrease occurring in Niagara County (-4.37%). The four figures at the top display State of New York tax revenue impact by county for 2008, 2012, 2016, and 2020, as indicated.

Table 9

County Name				
Concept	2008	2012	2016	2020
Albany County				
Total Employment	10,405	11,830	13,329	14,764
Total Personal Income	699,323	857,665	1,035,539	1,222,407
Total Corporate Sales	1,228,778	1,445,135	1,688,383	1,945,177
New York State Tax Revenue	88,088	108,112	130,630	154,304
New York Local Tax Revenue	91,714	112,561	136,006	160,654
Allegany County				
Total Employment	232	262	294	325
Total Personal Income	8,287	10,120	12,187	14,356
Total Corporate Sales	16,043	18,402	21,641	25,058
New York State Tax Revenue	2,943	3,596	4,328	5,096
New York Local Tax Revenue	3,064	3,744	4,506	5,306
Bronx County				
Total Employment	10,229	11,832	13,551	15,226
Total Personal Income	722,875	908,168	1,119,764	1,346,506
Total Corporate Sales	1,198,924	1,414,392	1,670,507	1,943,441
New York State Tax Revenue	153,154	189,667	231,340	275,616
New York Local Tax Revenue	159,457	197,473	240,861	286,959
Broome County				
Total Employment	4,582	5,287	5,921	6,526
Total Personal Income	292,041	361,445	433,561	509,098
Total Corporate Sales	912,581	1,311,615	1,538,374	1,777,772
New York State Tax Revenue	50,049	61,896	74,261	87,212
New York Local Tax Revenue	52,109	64,444	77,317	90,801
Cattaraugus County				
Total Employment	856	967	1,083	1,194
Total Personal Income	43,179	52,983	63,980	75,516
Total Corporate Sales	73,452	84,803	98,416	112,737
New York State Tax Revenue	10,109	12,369	14,906	17,563
New York Local Tax Revenue	10,525	12,878	15,519	18,286
Cayuga County				
Total Employment	1,095	1,247	1,407	1,560
Total Personal Income	53,863	66,526	80,760	95,787
Total Corporate Sales	96,356	113,018	132,699	153,478
New York State Tax Revenue	16,247	19,955	24,105	28,468
New York Local Tax Revenue	16,916	20,777	25,097	29,639
Chautauqua County				
Total Employment	1,653	1,856	2,068	2,268
Total Personal Income	85,857	104,286	124,776	146,073
Total Corporate Sales	169,394	204,264	236,508	270,323
New York State Tax Revenue	17,188	20,886	25,003	29,286
New York Local Tax Revenue	17,896	21,745	26,032	30,491
Chemung County				
Total Employment	1,946	2,206	2,452	2,684
Total Personal Income	125,047	152,415	181,685	212,003
Total Corporate Sales	209,547	242,092	277,899	315,344
New York State Tax Revenue	20,808	25,388	30,305	35,407
New York Local Tax Revenue	21,665	26,433	31,552	36,864
Chenango County				
Total Employment	503	574	643	709
Total Personal Income	21,651	26,626	31,997	37,629
Total Corporate Sales	49,672	61,835	72,765	84,305
New York State Tax Revenue	6,384	7,856	9,445	11,111
New York Local Tax Revenue	6,647	8,179	9,834	11,568

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Clinton County				
Total Employment	1,380	1,572	1,775	1,972
Total Personal Income	72,530	89,605	108,943	129,415
Total Corporate Sales	131,941	153,683	180,478	208,871
New York State Tax Revenue	14,248	17,609	21,413	25,442
New York Local Tax Revenue	14,835	18,333	22,295	26,489
Columbia County				
Total Employment	887	1,015	1,152	1,284
Total Personal Income	45,370	56,245	68,590	81,681
Total Corporate Sales	83,056	97,768	115,227	133,740
New York State Tax Revenue	12,472	15,413	18,753	22,288
New York Local Tax Revenue	12,985	16,047	19,525	23,205
Cortland County				
Total Employment	982	1,127	1,266	1,398
Total Personal Income	44,692	55,280	66,610	78,496
Total Corporate Sales	84,569	99,640	116,566	134,382
New York State Tax Revenue	9,871	12,191	14,698	17,330
New York Local Tax Revenue	10,278	12,693	15,303	18,043
Delaware County				
Total Employment	427	487	548	606
Total Personal Income	14,625	17,928	21,663	25,609
Total Corporate Sales	29,782	34,707	41,065	47,804
New York State Tax Revenue	4,069	5,006	6,051	7,153
New York Local Tax Revenue	4,237	5,212	6,300	7,448
Dutchess County				
Total Employment	4,838	5,569	6,366	7,140
Total Personal Income	354,671	441,536	542,973	651,327
Total Corporate Sales	612,280	731,283	858,336	993,459
New York State Tax Revenue	81,768	101,728	124,866	149,553
New York Local Tax Revenue	85,133	105,915	130,005	155,708
Erie County				
Total Employment	19,688	22,179	24,837	27,363
Total Personal Income	1,229,416	1,497,348	1,799,772	2,116,048
Total Corporate Sales	2,206,008	2,551,573	2,962,103	3,393,297
New York State Tax Revenue	232,540	283,130	340,212	399,894
New York Local Tax Revenue	242,110	294,783	354,213	416,352
Essex County				
Total Employment	462	527	595	661
Total Personal Income	17,709	21,810	26,409	31,277
Total Corporate Sales	34,261	40,027	47,485	55,403
New York State Tax Revenue	4,125	5,086	6,168	7,313
New York Local Tax Revenue	4,295	5,295	6,422	7,614
Franklin County				
Total Employment	640	737	839	937
Total Personal Income	31,474	39,390	48,320	57,838
Total Corporate Sales	50,639	59,272	69,536	80,443
New York State Tax Revenue	6,184	7,715	9,441	11,277
New York Local Tax Revenue	6,439	8,033	9,829	11,741
Fulton County				
Total Employment	760	863	973	1,079
Total Personal Income	30,351	37,252	45,095	53,378
Total Corporate Sales	59,372	69,514	82,049	95,311
New York State Tax Revenue	9,038	11,062	13,347	15,752
New York Local Tax Revenue	9,410	11,517	13,897	16,400

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Genesee County				
Total Employment	1,013	1,143	1,282	1,414
Total Personal Income	38,071	46,289	55,522	65,191
Total Corporate Sales	75,106	86,834	102,149	118,270
New York State Tax Revenue	10,543	12,804	15,354	18,022
New York Local Tax Revenue	10,977	13,331	15,986	18,764
Greene County				
Total Employment	386	442	502	560
Total Personal Income	14,666	18,163	22,092	26,243
Total Corporate Sales	28,675	34,007	40,432	47,253
New York State Tax Revenue	6,496	8,016	9,733	11,545
New York Local Tax Revenue	6,763	8,346	10,133	12,020
Hamilton County				
Total Employment	35	40	45	50
Total Personal Income	778	956	1,154	1,361
Total Corporate Sales	1,610	1,931	2,327	2,748
New York State Tax Revenue	438	538	651	770
New York Local Tax Revenue	456	560	678	801
Herkimer County				
Total Employment	685	772	863	950
Total Personal Income	22,770	27,618	33,007	38,641
Total Corporate Sales	51,832	60,583	71,968	83,983
New York State Tax Revenue	9,456	11,514	13,819	16,231
New York Local Tax Revenue	9,845	11,988	14,388	16,898
Jefferson County				
Total Employment	1,873	2,119	2,374	2,618
Total Personal Income	112,593	138,552	167,385	197,726
Total Corporate Sales	189,030	218,517	253,788	290,933
New York State Tax Revenue	22,144	27,238	32,898	38,852
New York Local Tax Revenue	23,055	28,359	34,252	40,451
Kings County				
Total Employment	23,206	26,925	30,965	34,924
Total Personal Income	1,461,261	1,840,017	2,276,445	2,745,934
Total Corporate Sales	2,473,322	2,922,886	3,456,926	4,027,305
New York State Tax Revenue	340,224	421,220	514,009	612,702
New York Local Tax Revenue	354,226	438,556	535,163	637,918
Lewis County				
Total Employment	159	178	197	216
Total Personal Income	6,658	8,043	9,598	11,218
Total Corporate Sales	13,438	15,165	17,750	20,474
New York State Tax Revenue	2,981	3,633	4,363	5,127
New York Local Tax Revenue	3,104	3,783	4,543	5,338
Livingston County				
Total Employment	591	670	753	832
Total Personal Income	22,412	27,514	33,236	39,255
Total Corporate Sales	41,869	48,708	57,361	66,494
New York State Tax Revenue	9,109	11,082	13,312	15,647
New York Local Tax Revenue	9,484	11,538	13,860	16,291
Madison County				
Total Employment	941	1,066	1,198	1,324
Total Personal Income	44,086	54,008	65,183	76,901
Total Corporate Sales	79,393	92,276	108,041	124,642
New York State Tax Revenue	17,004	20,738	24,917	29,287
New York Local Tax Revenue	17,704	21,591	25,943	30,492

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Monroe County				
Total Employment	16,161	18,186	20,362	22,431
Total Personal Income	942,221	1,138,675	1,362,599	1,596,412
Total Corporate Sales	1,921,198	2,265,895	2,646,944	3,047,452
New York State Tax Revenue	167,699	202,771	242,703	284,406
New York Local Tax Revenue	174,601	211,116	252,692	296,111
Montgomery County				
Total Employment	882	989	1,101	1,207
Total Personal Income	47,092	56,947	67,869	79,189
Total Corporate Sales	84,939	97,053	112,412	128,540
New York State Tax Revenue	10,201	12,400	14,853	17,411
New York Local Tax Revenue	10,621	12,910	15,465	18,127
Nassau County				
Total Employment	34,169	38,989	44,129	49,070
Total Personal Income	2,634,211	3,249,521	3,947,548	4,684,199
Total Corporate Sales	4,527,142	5,297,266	6,189,290	7,133,649
New York State Tax Revenue	541,389	667,433	810,765	962,206
New York Local Tax Revenue	563,670	694,901	844,133	1,001,806
New York County				
Total Employment	58,066	65,977	74,352	82,393
Total Personal Income	6,072,711	7,354,483	8,813,584	10,339,692
Total Corporate Sales	12,237,654	14,480,519	17,067,859	19,808,787
New York State Tax Revenue	499,074	606,586	729,038	857,462
New York Local Tax Revenue	519,614	631,551	759,042	892,751
Niagara County				
Total Employment	3,220	3,602	4,007	4,388
Total Personal Income	149,863	180,122	214,057	249,254
Total Corporate Sales	296,728	337,174	392,838	451,236
New York State Tax Revenue	41,168	49,777	59,459	69,538
New York Local Tax Revenue	42,863	51,826	61,906	72,400
Oneida County				
Total Employment	5,407	6,097	6,830	7,528
Total Personal Income	301,320	367,675	442,375	520,532
Total Corporate Sales	553,744	651,442	758,715	871,505
New York State Tax Revenue	55,715	67,979	81,774	96,206
New York Local Tax Revenue	58,008	70,777	85,140	100,166
Onondaga County				
Total Employment	12,994	14,650	16,378	18,018
Total Personal Income	872,255	1,059,949	1,269,244	1,487,437
Total Corporate Sales	1,617,264	1,882,823	2,187,829	2,508,286
New York State Tax Revenue	150,074	182,448	218,550	256,199
New York Local Tax Revenue	156,250	189,957	227,544	266,743
Ontario County				
Total Employment	1,982	2,249	2,525	2,789
Total Personal Income	96,337	118,363	142,850	168,616
Total Corporate Sales	217,337	274,949	323,411	374,542
New York State Tax Revenue	21,548	26,294	31,619	37,204
New York Local Tax Revenue	22,435	27,376	32,920	38,735
Orange County				
Total Employment	5,380	6,182	7,034	7,860
Total Personal Income	365,323	455,918	558,761	668,394
Total Corporate Sales	598,434	701,442	821,272	948,668
New York State Tax Revenue	84,988	105,824	129,559	154,840
New York Local Tax Revenue	88,486	110,179	134,891	161,212

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Orleans County				
Total Employment	455	512	572	629
Total Personal Income	20,506	25,018	30,018	35,252
Total Corporate Sales	40,963	47,157	55,274	63,811
New York State Tax Revenue	6,416	7,789	9,330	10,942
New York Local Tax Revenue	6,681	8,110	9,714	11,392
Oswego County				
Total Employment	1,563	1,771	1,990	2,199
Total Personal Income	66,621	81,269	97,684	114,974
Total Corporate Sales	139,427	161,512	190,656	221,395
New York State Tax Revenue	23,612	28,772	34,540	40,587
New York Local Tax Revenue	24,584	29,956	35,962	42,257
Otsego County				
Total Employment	878	1,001	1,123	1,238
Total Personal Income	43,443	53,555	64,562	76,099
Total Corporate Sales	76,445	89,473	104,645	120,638
New York State Tax Revenue	8,973	11,047	13,314	15,690
New York Local Tax Revenue	9,342	11,501	13,862	16,336
Putnam County				
Total Employment	1,537	1,792	2,068	2,339
Total Personal Income	124,758	158,041	196,422	237,891
Total Corporate Sales	208,252	250,830	296,336	345,069
New York State Tax Revenue	37,984	47,401	58,207	69,758
New York Local Tax Revenue	39,547	49,352	60,603	72,629
Queens County				
Total Employment	21,048	24,051	27,283	30,405
Total Personal Income	1,347,316	1,663,823	2,024,526	2,406,498
Total Corporate Sales	2,438,413	2,858,620	3,359,791	3,891,389
New York State Tax Revenue	373,498	459,471	557,494	661,107
New York Local Tax Revenue	388,870	478,381	580,438	688,315
Rensselaer County				
Total Employment	2,399	2,741	3,099	3,443
Total Personal Income	138,618	171,223	207,893	246,571
Total Corporate Sales	244,582	287,004	336,652	389,122
New York State Tax Revenue	38,627	47,529	57,546	68,094
New York Local Tax Revenue	40,216	49,485	59,914	70,896
Richmond County				
Total Employment	6,162	7,109	8,120	9,102
Total Personal Income	442,174	553,708	680,867	816,708
Total Corporate Sales	722,911	848,687	993,848	1,148,228
New York State Tax Revenue	110,197	136,890	167,368	199,803
New York Local Tax Revenue	114,732	142,524	174,256	208,026
Rockland County				
Total Employment	5,225	6,030	6,894	7,737
Total Personal Income	411,751	515,171	633,854	760,779
Total Corporate Sales	720,437	848,462	999,493	1,160,332
New York State Tax Revenue	90,161	112,162	137,363	164,218
New York Local Tax Revenue	93,872	116,778	143,016	170,977
Saratoga County				
Total Employment	3,531	4,064	4,634	5,189
Total Personal Income	175,404	218,673	268,197	321,206
Total Corporate Sales	317,767	374,312	443,880	517,979
New York State Tax Revenue	64,112	79,107	96,116	114,130
New York Local Tax Revenue	66,750	82,363	100,072	118,827

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Schenectady County				
Total Employment	3,078	3,501	3,949	4,377
Total Personal Income	196,375	239,976	289,232	340,911
Total Corporate Sales	379,933	451,452	529,916	612,767
New York State Tax Revenue	38,637	47,332	57,135	67,436
New York Local Tax Revenue	40,227	49,280	59,487	70,211
Schoharie County				
Total Employment	304	345	387	427
Total Personal Income	10,999	13,529	16,302	19,206
Total Corporate Sales	20,357	23,949	28,232	32,758
New York State Tax Revenue	4,374	5,370	6,479	7,643
New York Local Tax Revenue	4,554	5,591	6,746	7,957
Schuyler County				
Total Employment	256	291	327	361
Total Personal Income	10,126	12,552	15,257	18,120
Total Corporate Sales	17,859	20,830	24,494	28,370
New York State Tax Revenue	3,373	4,164	5,033	5,949
New York Local Tax Revenue	3,512	4,335	5,241	6,194
Seneca County				
Total Employment	399	451	506	558
Total Personal Income	14,451	17,599	21,145	24,875
Total Corporate Sales	33,547	39,368	46,778	54,609
New York State Tax Revenue	4,452	5,451	6,569	7,745
New York Local Tax Revenue	4,635	5,675	6,839	8,064
St. Lawrence County				
Total Employment	1,116	1,262	1,414	1,558
Total Personal Income	55,535	67,858	81,619	96,012
Total Corporate Sales	97,802	112,480	131,015	150,524
New York State Tax Revenue	11,591	14,178	17,067	20,092
New York Local Tax Revenue	12,068	14,761	17,770	20,919
Steuben County				
Total Employment	1,031	1,172	1,314	1,450
Total Personal Income	52,995	64,888	77,918	91,587
Total Corporate Sales	105,621	126,867	148,615	171,530
New York State Tax Revenue	12,277	15,015	18,010	21,145
New York Local Tax Revenue	12,783	15,633	18,752	22,016
Suffolk County				
Total Employment	24,765	28,439	32,390	36,228
Total Personal Income	1,762,512	2,195,183	2,690,855	3,219,663
Total Corporate Sales	3,140,805	3,754,635	4,418,482	5,124,578
New York State Tax Revenue	471,523	584,927	714,493	852,225
New York Local Tax Revenue	490,929	608,999	743,898	887,298
Sullivan County				
Total Employment	992	1,141	1,297	1,448
Total Personal Income	51,307	64,032	78,378	93,626
Total Corporate Sales	86,631	101,935	119,839	138,869
New York State Tax Revenue	13,633	16,987	20,782	24,816
New York Local Tax Revenue	14,194	17,686	21,637	25,837
Tioga County				
Total Employment	482	562	630	695
Total Personal Income	18,923	22,876	27,410	32,161
Total Corporate Sales	43,995	51,037	60,170	69,802
New York State Tax Revenue	9,332	11,488	13,806	16,236
New York Local Tax Revenue	9,717	11,961	14,374	16,904

Table 9, continued

County Name				
Concept	2008	2012	2016	2020
Tompkins County				
Total Employment	2,036	2,354	2,678	2,990
Total Personal Income	103,281	129,606	158,795	189,794
Total Corporate Sales	218,791	281,080	332,378	386,564
New York State Tax Revenue	17,748	22,211	27,149	32,384
New York Local Tax Revenue	18,478	23,126	28,266	33,716
Ulster County				
Total Employment	2,132	2,442	2,776	3,098
Total Personal Income	105,299	130,737	159,724	190,519
Total Corporate Sales	184,215	216,424	254,897	295,772
New York State Tax Revenue	34,609	42,998	52,604	62,823
New York Local Tax Revenue	36,033	44,768	54,769	65,409
Warren County				
Total Employment	2,287	2,585	2,907	3,215
Total Personal Income	134,923	165,070	199,326	235,326
Total Corporate Sales	231,615	268,422	311,608	357,163
New York State Tax Revenue	21,019	25,747	31,119	36,772
New York Local Tax Revenue	21,884	26,807	32,399	38,286
Washington County				
Total Employment	591	661	735	806
Total Personal Income	24,368	29,227	34,726	40,468
Total Corporate Sales	51,860	59,979	70,456	81,532
New York State Tax Revenue	10,369	12,656	15,251	17,982
New York Local Tax Revenue	10,795	13,177	15,878	18,722
Wayne County				
Total Employment	991	1,111	1,236	1,356
Total Personal Income	38,154	45,988	54,784	63,931
Total Corporate Sales	81,851	94,762	111,422	128,950
New York State Tax Revenue	15,476	18,718	22,385	26,211
New York Local Tax Revenue	16,113	19,489	23,306	27,290
Westchester County				
Total Employment	17,856	20,481	23,294	26,017
Total Personal Income	1,618,607	2,005,505	2,447,870	2,917,633
Total Corporate Sales	2,830,273	3,320,990	3,894,394	4,503,024
New York State Tax Revenue	348,245	429,571	522,462	620,860
New York Local Tax Revenue	362,577	447,250	543,965	646,412
Wyoming County				
Total Employment	424	477	532	585
Total Personal Income	18,178	22,145	26,589	31,241
Total Corporate Sales	35,111	40,656	47,662	55,042
New York State Tax Revenue	5,686	6,924	8,315	9,771
New York Local Tax Revenue	5,920	7,209	8,657	10,173
Yates County				
Total Employment	339	381	426	467
Total Personal Income	12,091	14,701	17,610	20,644
Total Corporate Sales	23,192	26,451	30,778	35,327
New York State Tax Revenue	3,705	4,519	5,426	6,375
New York Local Tax Revenue	3,857	4,704	5,649	6,638

Table 9: State of New York Economic Impacts by County, 2008 - 2020. Total Employment, Total Personal Income, Total Corporate Sales, New York State Tax Revenue, and New York Local Tax Revenue during years 2008, 2012, 2016, and 2020 for each county in the State of New York. Employment is reported in Full-Time Equivalents (FTE), and all other values are reported in thousands of real 2008 dollars ($1,000s).

State of New York Impacts by Physician Specialty Grouping

Economic impacts of Private Practice Physicians in the State of New York can be broken out into impacts by Physician Specialty Grouping using data regarding physician population by Physician Specialty Grouping, rate of participation in Private Practice Medicine by Physician Specialty Grouping, and relative compensation by Physician Specialty Grouping. Those impact breakouts are discussed in this section from two perspectives: total economic impacts by Physician Specialty Grouping, and average impact per physician by Physician Specialty Grouping. One important assumption is made in the process of providing impact breakouts by Physician Specialty Grouping: that the marginal productivity of physicians and support staff for each Physician Specialty Grouping is the same (in other words, each Physician Specialty Grouping generates the same amount of corporate sales per dollar personal income).

These data are presented at the state level only due to a limitation in the member and non-member information provided by the Medical Society of the State of New York. Address data for members and non-members is left to the discretion of the responding physician, and in some cases represents a practice address, while in other cases represents a residence address. This non-uniformity renders untenable any attempt to breakout economic impacts by Physician Specialty Grouping at the Metropolitan Statistical Area (MSA) or County Level.

All data reported in this section are for 2008. Projection of these data through future years requires four inputs that are beyond the scope of this study, including:

- change over time in total physician population for the State of New York

Figure 14

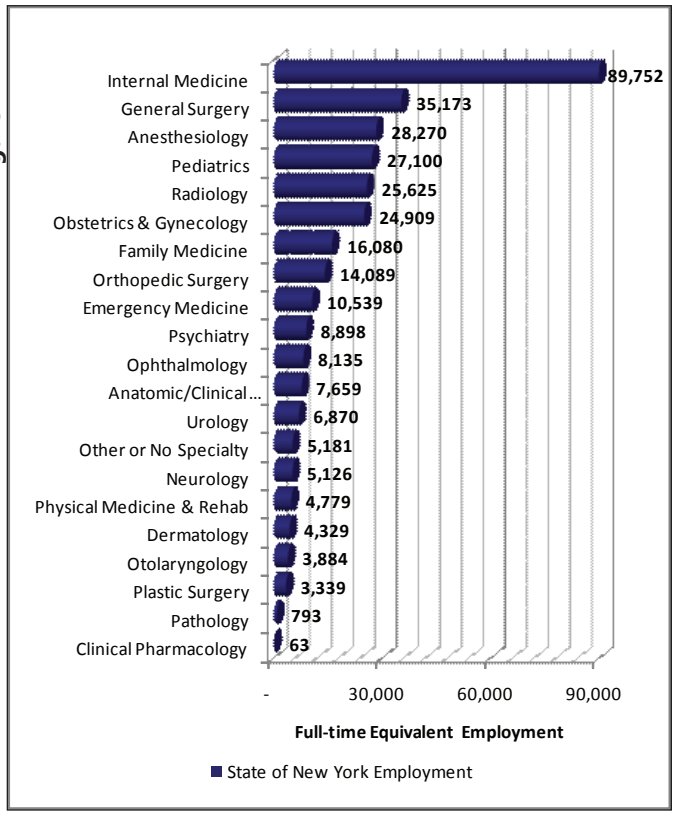


Figure 14: State of New York Employment Impact by Physician Specialty Grouping, 2008. The total employment impact in the State of New York for each Physician Specialty Grouping reported in full-time equivalents.

Figure 15

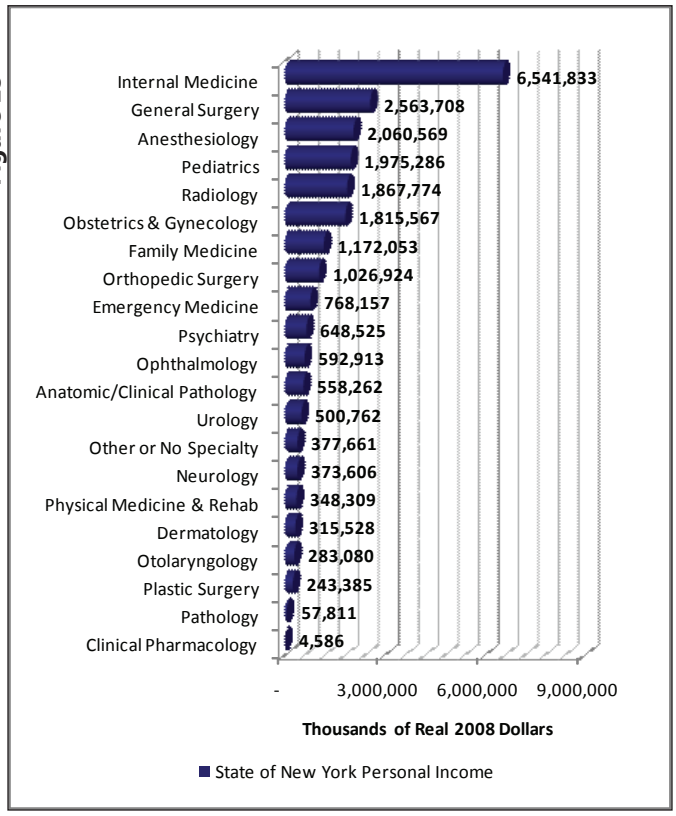


Figure 15: State of New York Personal Income Impact by Physician Specialty Grouping, 2008. The total personal income impact in the State of New York for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

- change over time in share of total physician population for each Physician Specialty Grouping
- change over time in rate of participation in Private Practice Medicine for each Physician Specialty Grouping
- change over time in relative compensation for each Physician Specialty Grouping.

Total Impacts by Physician Specialty Grouping at the State Level

As noted in Table 2 (page 8), the largest Physician Specialty Grouping in terms of Private Practice Physician population is Internal Medicine with 14,997, or 35.32% of the total population of Private Practice Physicians in the State of New York as noted in Table 10 (page 53). However, the Internal Medicine Physician Specialty Grouping generates only 27.15% of the total economic impacts of Private Practice Physicians in the State of New York, also as noted in that table, given their relatively low level of compensation as compared with physicians in many other Specialty Groupings. A comparison between the percentage of Private Practice Physician population and percentage total economic impacts is available for each Physician Specialty Group in Table 10 (page 53).

Total employment impact in the State of New York by Physician Specialty Grouping ranges from 89,752 for Internal Medicine to 63 for Clinical Pharmacology. Total employment impact for each Physician Specialty Grouping is listed in Table 10 (page 53), and displayed in Figure 14 (page 48).

Total personal income impact in the State of New York by Physician Specialty Grouping ranges from $6.542 billion for Internal Medicine to $4.586 million for Clinical Pharmacology. Total personal income impact for each Physician Specialty Grouping is listed in Table 10 (page 53), and displayed in Figure 15 (page 48).

Total corporate sales impact in the State of New York by Physician Specialty Grouping ranges from $12.149

Figure 16

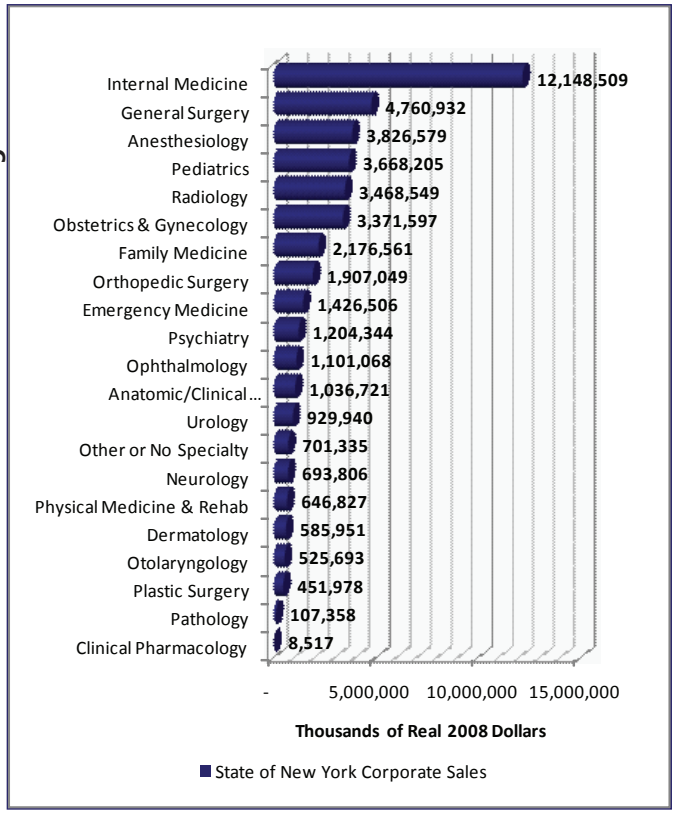


Figure 16: State of New York Corporate Sales Impact by Physician Specialty Grouping, 2008. The total corporate sales impact in the State of New York for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Figure 17

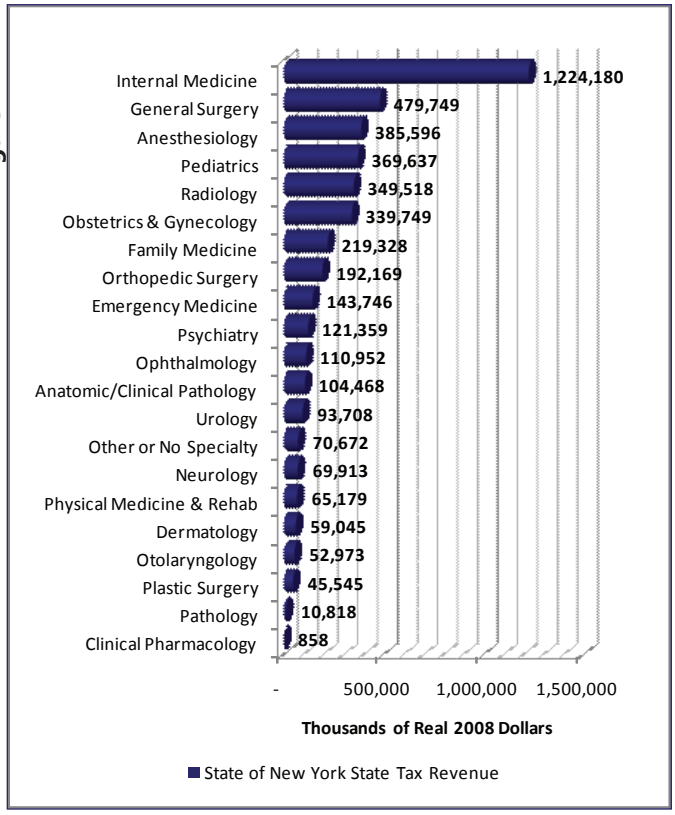


Figure 17: State of New York State Tax Revenue Impact by Physician Specialty Grouping, 2008. The NY state tax revenue impact for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

billion for Internal Medicine to $8.517 million for Clinical Pharmacology. Total corporate sales impact for each Physician Specialty Grouping is listed in Table 10 (page 53), and displayed in Figure 16 (page 49).

NY state tax revenue impact by Physician Specialty Grouping ranges from $1.224 billion for Internal Medicine to $858 thousand for Clinical Pharmacology. NY state tax revenue impact for each Physician Specialty Grouping is listed in Table 10 (page 53), and displayed in Figure 17 (page 49).

NY local tax revenue impact by Physician Specialty Grouping ranges from $1.275 billion for Internal Medicine to $894 thousand for Clinical Pharmacology. NY local tax revenue impact for each Physician Specialty Grouping is listed in Table 10 (page 53), and displayed in Figure 18 (this page).

Average Impacts per Physician by Physician Specialty Grouping at the State Level

A consequence of the marginal productivity assumption described at the beginning of this section is that relative average impacts per physician of each Physician Specialty Grouping are distributed identically to relative average compensation. Private Practice Physician relative compensation by Physician Specialty Grouping is listed in Table 2 (page 8), and is displayed in Figure 1 (page 9). Note that all average impacts per physician below include the individual physician.

Average employment impact in the State of New York per physician by Physician Specialty Grouping ranges from 13.87 for Orthopedic Surgery to 5.76 for Family Medicine, and has a mean value across all Physician Specialty Groupings of 7.79. Average employment impact per physician for each Physician Specialty Grouping is listed in Table 11 (page 53), and displayed in Figure 19 (this page).

Figure 18

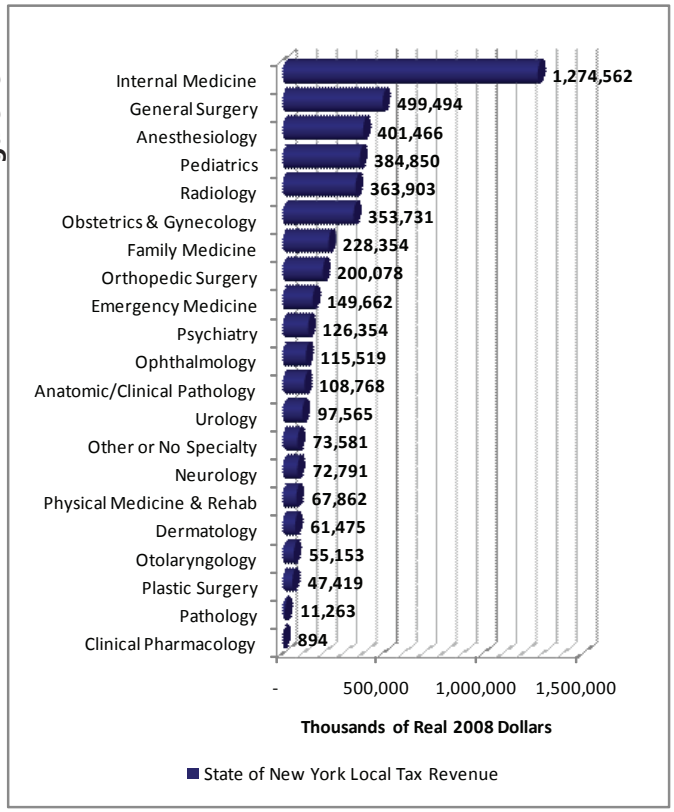


Figure 18: State of New York Local Tax Revenue Impact by Physician Specialty Grouping, 2008. The NY local tax revenue impact for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Figure 19

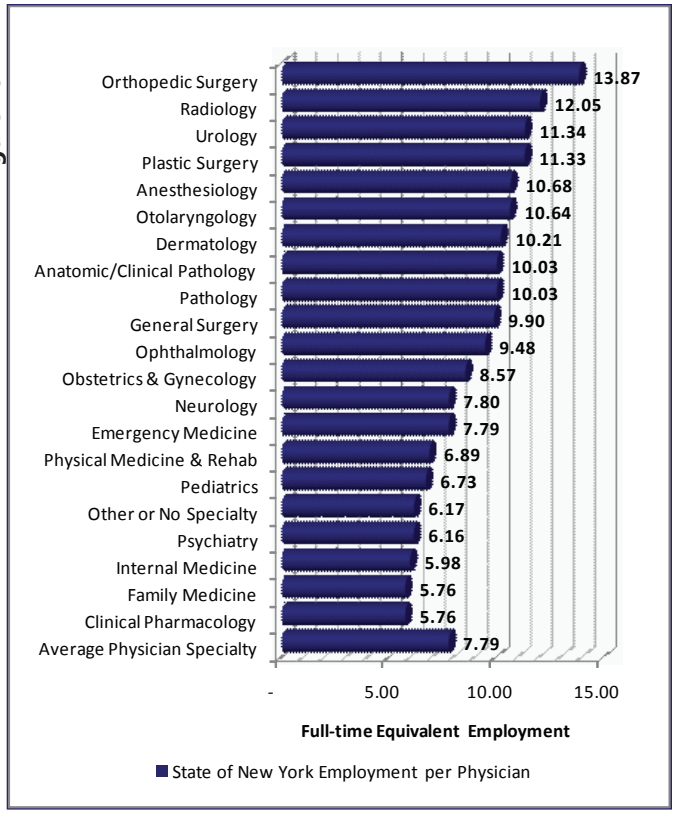


Figure 19: Average State of New York Employment Impact per Physician by Physician Specialty Grouping, 2008. The average State of New York employment impact per physician for each Physician Specialty Grouping reported in full-time equivalents.

Average personal income impact in the State of New York per physician by Physician Specialty Grouping ranges from $1.011 million for Orthopedic Surgery to $420 thousand Family Medicine, and has a mean value across all Physician Specialty Groupings of $568 thousand. Average personal income impact per physician for each Physician Specialty Grouping is listed in Table 11 (page 53), and displayed in Figure 20 (this page).

Average corporate sales impact in the State of New York per physician by Physician Specialty Grouping ranges from $1.877 million for Orthopedic Surgery to $779 thousand for Family Medicine, and has a mean value across all Physician Specialty Groupings of $1.054 million. Average corporate sales impact per physician for each Physician Specialty Grouping is listed in Table 11 (page 53), and displayed in Figure 21 (this page).

NY state tax revenue impact per physician by Physician Specialty Grouping ranges from $189 thousand for Orthopedic Surgery to $79 thousand for Family Medicine, and has a mean value across all Physician Specialty Groupings of $106 thousand. NY state tax revenue impact per physician for each Physician Specialty Grouping is listed in Table 11 (page 53), and displayed in Figure 22 (page 52).

NY local tax revenue impact per physician by Physician Specialty Grouping ranges from $197 thousand for Orthopedic Surgery to $82 thousand for Family Medicine, and has a mean value across all Physician Specialty Groupings of $111 thousand. NY local tax revenue impact per physician for each Physician Specialty Grouping is listed in Table 11 (page 53), and displayed in Figure 23 (page 52).

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Figure 20

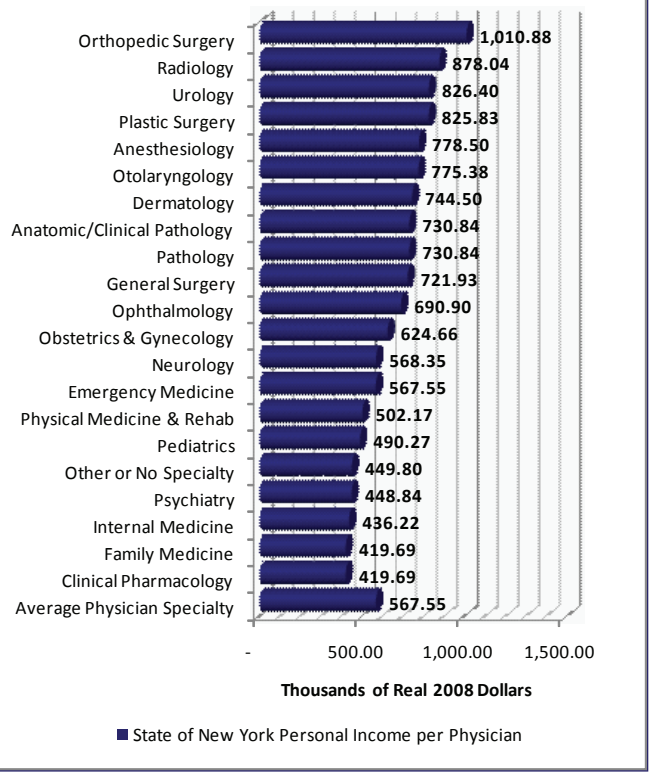

Figure 20: Average State of New York Personal Income Impact per Physician by Physician Specialty Grouping, 2008. The average State of New York personal Income impact per physician for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Figure 21

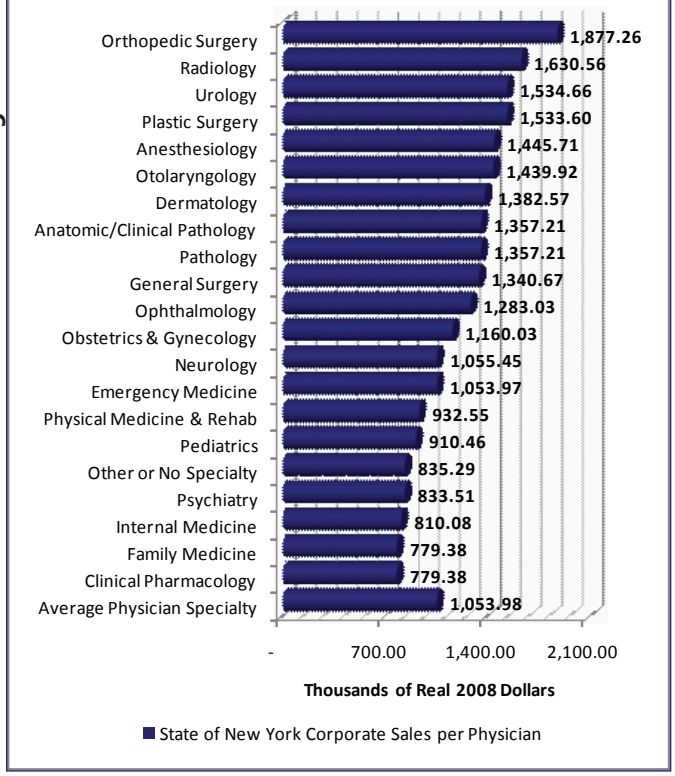

Figure 21: Average State of New York Corporate Sales Impact per Physician by Physician Specialty Grouping, 2008. The average State of New York corporate sales impact per physician for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Figure 22

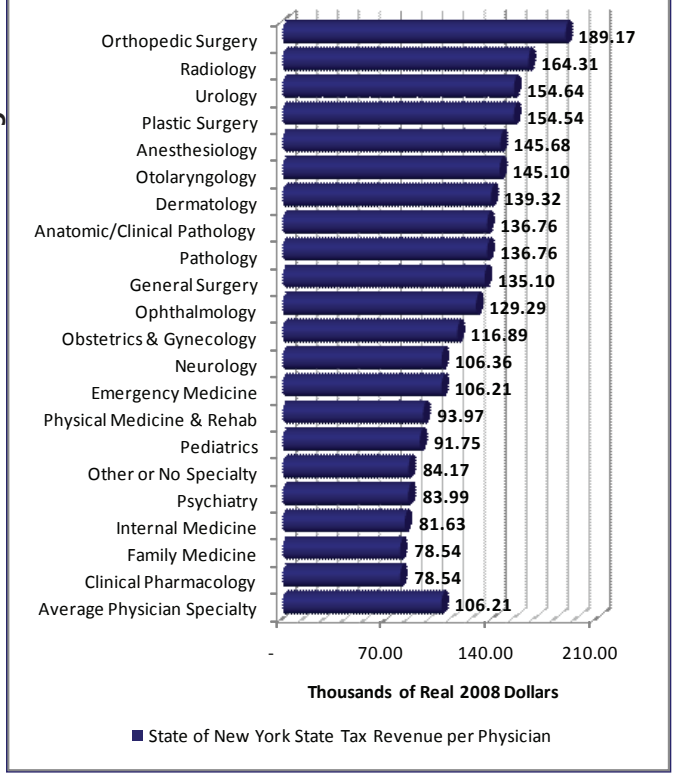

Figure 22: Average State of New York State Tax Revenue per Physician by Physician Specialty Grouping, 2008. The average NY state tax revenue impact per physician for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Figure 23

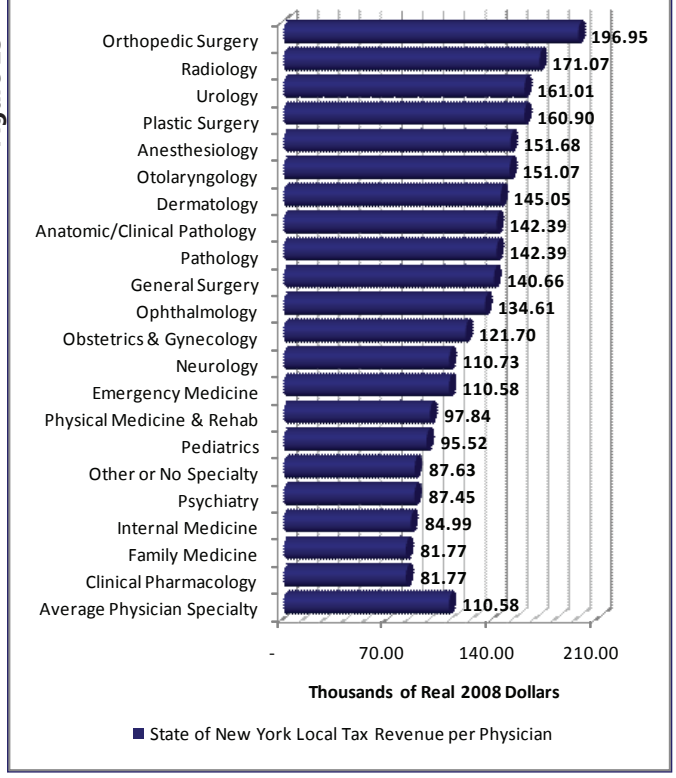

Figure 23: Average State of New York Local Tax Revenue Impact per Physician by Physician Specialty Grouping, 2008. The average NY local tax revenue impact per physician for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Table 10

Specialty Grouping	% PPP Pop	% Total Impacts	Employment	Personal Income	Corporate Sales	NY State Tax Rev	NY Local Tax Rev
Anatomic/Clinical Pathology	1.80%	2.32%	7,659	558,262	1,036,721	104,468	108,768
Anesthesiology	6.23%	8.55%	28,270	2,060,569	3,826,579	385,596	401,466
Clinical Pharmacology	0.03%	0.02%	63	4,586	8,517	858	894
Dermatology	1.00%	1.31%	4,329	315,528	585,951	59,045	61,475
Emergency Medicine	3.19%	3.19%	10,539	768,157	1,426,506	143,746	149,662
Family Medicine	6.58%	4.86%	16,080	1,172,053	2,176,561	219,328	228,354
General Surgery	8.36%	10.64%	35,173	2,563,708	4,760,932	479,749	499,494
Internal Medicine	35.32%	27.15%	89,752	6,541,833	12,148,509	1,224,180	1,274,562
Neurology	1.55%	1.55%	5,126	373,606	693,806	69,913	72,791
Obstetrics & Gynecology	6.85%	7.53%	24,909	1,815,567	3,371,597	339,749	353,731
Ophthalmology	2.02%	2.46%	8,135	592,913	1,101,068	110,952	115,519
Orthopedic Surgery	2.39%	4.26%	14,089	1,026,924	1,907,049	192,169	200,078
Otolaryngology	0.86%	1.17%	3,884	283,080	525,693	52,973	55,153
Pathology	0.19%	0.24%	793	57,811	107,358	10,818	11,263
Pediatrics	9.49%	8.20%	27,100	1,975,286	3,668,205	369,637	384,850
Physical Medicine & Rehab	1.63%	1.45%	4,779	348,309	646,827	65,179	67,862
Plastic Surgery	0.69%	1.01%	3,339	243,385	451,978	45,545	47,419
Psychiatry	3.40%	2.69%	8,898	648,525	1,204,344	121,359	126,354
Radiology	5.01%	7.75%	25,625	1,867,774	3,468,549	349,518	363,903
Urology	1.43%	2.08%	6,870	500,762	929,940	93,708	97,565
Other or No Specialty	1.98%	1.57%	5,181	377,661	701,335	70,672	73,581

Table 10: State of New York Economic Impacts by Physician Specialty Grouping, 2008. Percentage Private Practice Physician population and percent total economic impacts for each Physician Specialty Grouping. Employment impacts for each Physician Specialty Grouping reported in full-time equivalents. Personal income, corporate sales, NY state tax revenue, and NY local tax revenue impacts for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Table 11

Specialty Grouping	Employment	Personal Income	Corporate Sales	NY State Tax Revenue	NY Local Tax Revenue
Anatomic/Clinical Pathology	10.03	730.84	1,357.21	136.76	142.39
Anesthesiology	10.68	778.50	1,445.71	145.68	151.68
Clinical Pharmacology	5.76	419.69	779.38	78.54	81.77
Dermatology	10.21	744.50	1,382.57	139.32	145.05
Emergency Medicine	7.79	567.55	1,053.97	106.21	110.58
Family Medicine	5.76	419.69	779.38	78.54	81.77
General Surgery	9.90	721.93	1,340.67	135.10	140.66
Internal Medicine	5.98	436.22	810.08	81.63	84.99
Neurology	7.80	568.35	1,055.45	106.36	110.73
Obstetrics & Gynecology	8.57	624.66	1,160.03	116.89	121.70
Ophthalmology	9.48	690.90	1,283.03	129.29	134.61
Orthopedic Surgery	13.87	1,010.88	1,877.26	189.17	196.95
Otolaryngology	10.64	775.38	1,439.92	145.10	151.07
Pathology	10.03	730.84	1,357.21	136.76	142.39
Pediatrics	6.73	490.27	910.46	91.75	95.52
Physical Medicine & Rehab	6.89	502.17	932.55	93.97	97.84
Plastic Surgery	11.33	825.83	1,533.60	154.54	160.90
Psychiatry	6.16	448.84	833.51	83.99	87.45
Radiology	12.05	878.04	1,630.56	164.31	171.07
Urology	11.34	826.40	1,534.66	154.64	161.01
Other or No Specialty	6.17	449.80	835.29	84.17	87.63
Average Specialty Grouping	7.79	567.55	1,053.98	106.21	110.58

Table 11: Average State of New York Economic Impacts per Physician by Physician Specialty Grouping, 2008. Average employment impact per physician for each Physician Specialty Grouping reported in full-time equivalent employment. Total personal income, total corporate sales, NY state tax revenue, and NY local tax revenue impacts per physician for each Physician Specialty Grouping reported in thousands of real 2008 dollars ($1,000s).

Metropolitan Statistical Area Contributions to Impacts

As with the distribution of economic impacts by MSA, an examination the economic impact contributions to State of New York impacts resulting from the Private Practice of Medicine in each Metropolitan Statistical Area (MSA) of the State of New York reveals that the state is dominated by the New York-Long Island MSA. More than 66% of all economic activity generated by the Offices of Physicians in the State of New York is caused by the activity of Private Practice Physicians in that MSA. By this measure, it is more than ten times as large as the next largest MSA in the state, Buffalo-Niagara Falls.

As noted earlier, this disproportionality presents difficulties when attempting to present MSA-level comparisons on a single figure as most MSAs are scaled out of significance by New York-Long Island. Once again, figures in this section are presented with the New York-Long Island MSA and the Buffalo-Niagara Falls MSA at the top, followed by the Buffalo-Niagara Falls MSA and all other MSAs and MSA-equivalents presented immediately below at one-tenth the horizontal scale.

Total Employment

In 2008, the largest MSA contribution to the State of New York total employment impact resulted from the Private Practice of Medicine in the New York-Long Island MSA, and was 202,691 (61.31% of the state total). Of this amount, 191,902 (94.68%) occurred in the MSA itself, and 10,789 (5.32%) occurred in the remainder of the State of New York. The smallest MSA contribution to the State of New York total employment impact resulted from the Private Practice of Medicine in the East Central non-MSA region, and was 857 (26 hundredths of a percent of the state total). Of this amount, 417 (48.66%) occurred in the MSA itself, and 440 (51.34%) occurred in the remainder of the State of New York.

By 2020, the largest MSA contribution to the State of New York total employment impact is projected to result from the Private Practice of Medicine in the New York-Long Island MSA, and is 294,073 (62.02% of the state total). Of this amount, 278,629 (94.75%) occurs in the MSA itself, and 15,444 (5.25%) occurs in the remainder of the State of New York. The smallest MSA contribution to the State of New York total employment impact is projected to result from the Private Practice of Medicine in the East Central non-MSA region, and is 1,250 (26 hundredths of a percent of the state total). Of this amount, 604 (48.32%) occurs in the MSA itself, and 646 (51.68%) occurs in the remainder of the State of New York.

Contributions to the total employment impact in the State of New York resulting from the Private Practice of Medicine in each MSA are listed in Table 12 (page 69), and are displayed in Figure 24 (page 56).

The relative contribution to total employment impact for 2008 by MSA is displayed in Map 17 (page 57). By 2020, the largest increase in share of contributions to total employment impact occurs in the Poughkeepsie-Newburgh-Middleton MSA (+3.46%) and the largest decrease occurs in the Elmira MSA (-5.80%). Percentage changes in share of relative contribution to total employment impact from 2008 to 2020 by MSA are displayed in Map 18 (page 58).

Total Personal Income

In 2008, the largest MSA contribution to the State of New York total personal income impact resulted from the Private Practice of Medicine in the New York-Long Island MSA, and was $16.269 billion (67.52% of the state total). Of this amount, $15.795 billion (97.09%) occurred in the MSA itself, and $473.975 million (2.91%) occurred in the remainder of the State of New York. The smallest MSA contribution to the State of New York total personal income impact resulted from the Private Practice of Medicine in the East Central non-MSA region, and was $55.353 million (23 hundredths of one percent of the state total). Of this amount, $32.217 million (58.20%) occurred in the MSA itself, and $23.136 million (41.80%) occurred in the remainder of the State of New York.

By 2020, the largest MSA contribution to the State of New York total personal income impact is projected to result

from the Private Practice of Medicine in the New York-Long Island MSA, and is $28.943 billion (68.07% of the state total). Of this amount, $28.126 billion (97.18%) occurs in the MSA itself, and $817.119 million (2.82%) occurs in the remainder of the State of New York. The smallest MSA contribution to the State of New York total personal income impact is projected to result from the Private Practice of Medicine in the East Central non-MSA region, and is $99.198 million (23 hundredths of one percent of the state total). Of this amount, $58.589 million (59.06%) occurs in the MSA itself, and $40.610 million (40.94%) occurs in the remainder of the State of New York.

Contributions to the total personal income impact in the State of New York resulting from the Private Practice of Medicine in each MSA are listed in Table 12 (page 69), and are displayed in Figure 25 (page 59).

The relative contribution to total personal income impact for 2008 by MSA is displayed in Map 19 (page 60). By 2020, the largest increase in share of contributions to total personal income impact occurs in the Poughkeepsie-Newburgh-Middleton MSA (+3.64%) and the largest decrease occurs in the Elmira MSA (-5.76%). Percentage changes in share of relative contribution to total personal income impact from 2008 to 2020 by MSA are displayed in Map 20 (page 61).

Total Corporate Sales

In 2008, the largest MSA contribution to the State of New York total corporate sales impact resulted from the Private Practice of Medicine in the New York-Long Island MSA, and was $29.924 billion (66.87% of the state total). Of this amount, $28.517 billion (95.30%) occurred in the MSA itself, and $1.407 million (4.70%) occurred in the remainder of the State of New York. The smallest MSA contribution to the State of New York total corporate sales impact resulted from the Private Practice of Medicine in the East Central non-MSA region, and was $103.477 million (23 hundredths of one percent of the state total). Of this amount, $47.954 million (46.34%) occurred in the MSA itself, and $55.524 million (53.66%) occurred in the remainder of the State of New York.

By 2020, the largest MSA contribution to the State of New York total corporate sales impact is projected to result from the Private Practice of Medicine in the New York-Long Island MSA, and is $48.301 billion (67.17% of the state total). Of this amount, $45.731 billion (94.68%) occurs in the MSA itself, and $2.569 million (5.32%) occurs in the remainder of the State of New York. The smallest MSA contribution to the State of New York total corporate sales impact is projected to result from the Private Practice of Medicine in the East Central non-MSA region, and is $169.762 million (24 hundredths of one percent of the state total). Of this amount, $72.458 million (42.68%) occurs in the MSA itself, and $97.304 million (57.32%) occurs in the remainder of the State of New York.

Contributions to the total corporate sales impact in the State of New York resulting from the Private Practice of Medicine in each MSA are listed in Table 12 (page 69), and are displayed in Figure 26 (page 62).

The relative contribution to total corporate sales impact for 2008 by MSA is displayed in Map 21 (page 63). By 2020, the largest increase in share of contributions to total corporate sales impact occurs in the Poughkeepsie-Newburgh-Middleton MSA (+2.61%) and the largest decrease occurs in the Elmira MSA (-4.91%). Percentage changes in share of relative contribution to total corporate sales impact from 2008 to 2020 by MSA are displayed in Map 22 (page 64).

New York State Tax Revenue

In 2008, the largest MSA contribution to the State of New York state tax revenue impact resulted from the Private Practice of Medicine in the New York-Long Island MSA, and was $2.962 billion (65.69% of the state total). Of this amount, $2.817 billion (95.10%) occurred in the MSA itself, and $145.014 million (4.90%) occurred in the remainder of the State of New York. The smallest MSA contribution to the State of New York state tax revenue impact resulted from the Private Practice of Medicine in the East Central non-MSA region, and was $10.768 million (24 hundredths of one percent of the state total). Of this amount, $5.200 million (48.29%) occurred in the MSA itself, and $5.567 million (51.71%) occurred in the remainder of the State of New York.

By 2020, the largest MSA contribution to the State of New York state tax revenue impact is projected to result from

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Figure 24

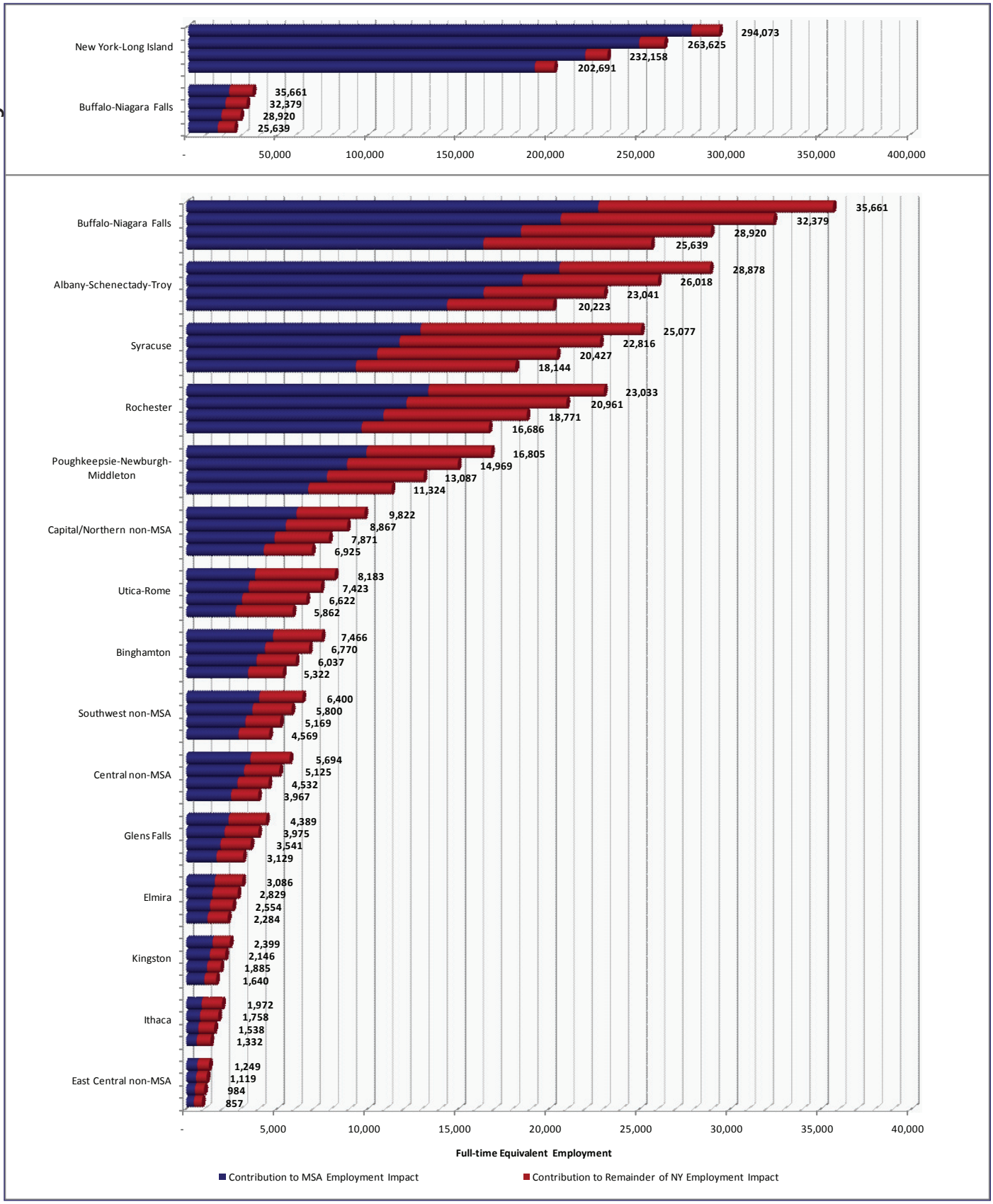

Figure 24: State of New York Employment Impact Contributions by MSA, 2008 - 2020. Contributions to total employment impact for each MSA and MSA-equivalent, reported full-time equivalents. The blue bar indicates impact contributions that occur within the MSA, and the red bar indicates impact contributions that occur within the remainder of the State of New York.

the Private Practice of Medicine in the New York-Long Island MSA, and is $5.279 billion (66.29% of the state total). Of this amount, $5.025 billion (95.18%) occurs in the MSA itself, and $254.358 million (4.82%) occurs in the remainder of the State of New York. The smallest MSA contribution to the State of New York state tax revenue impact is projected to result from the Private Practice of Medicine in the East Central non-MSA region, and is $19.316 million (24 hundredths of one percent of the state total). Of this amount, $9.455 million (48.95%) occurs in the MSA itself, and $9.861 million (51.05%) occurs in the remainder of the State of New York.

Contributions to the state tax revenue impact in the State of New York resulting from the Private Practice of Medicine in each MSA are listed in Table 12 (page 69), and are displayed in Figure 27 (page 65).

New York Local Tax Revenue

In 2008, the largest MSA contribution to the State of New York local tax revenue impact resulted from the Private Practice of Medicine in the New York-Long Island MSA,

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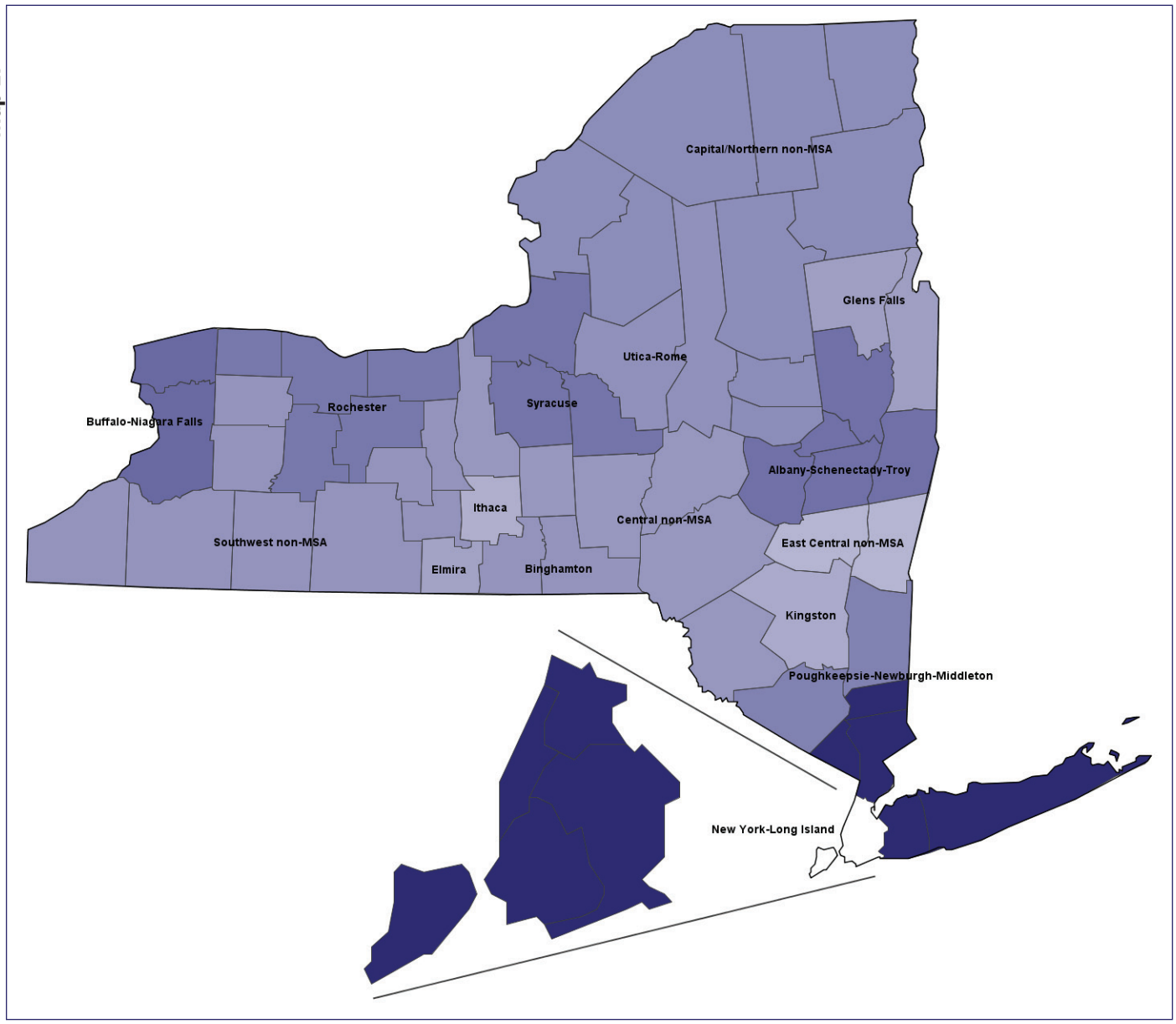
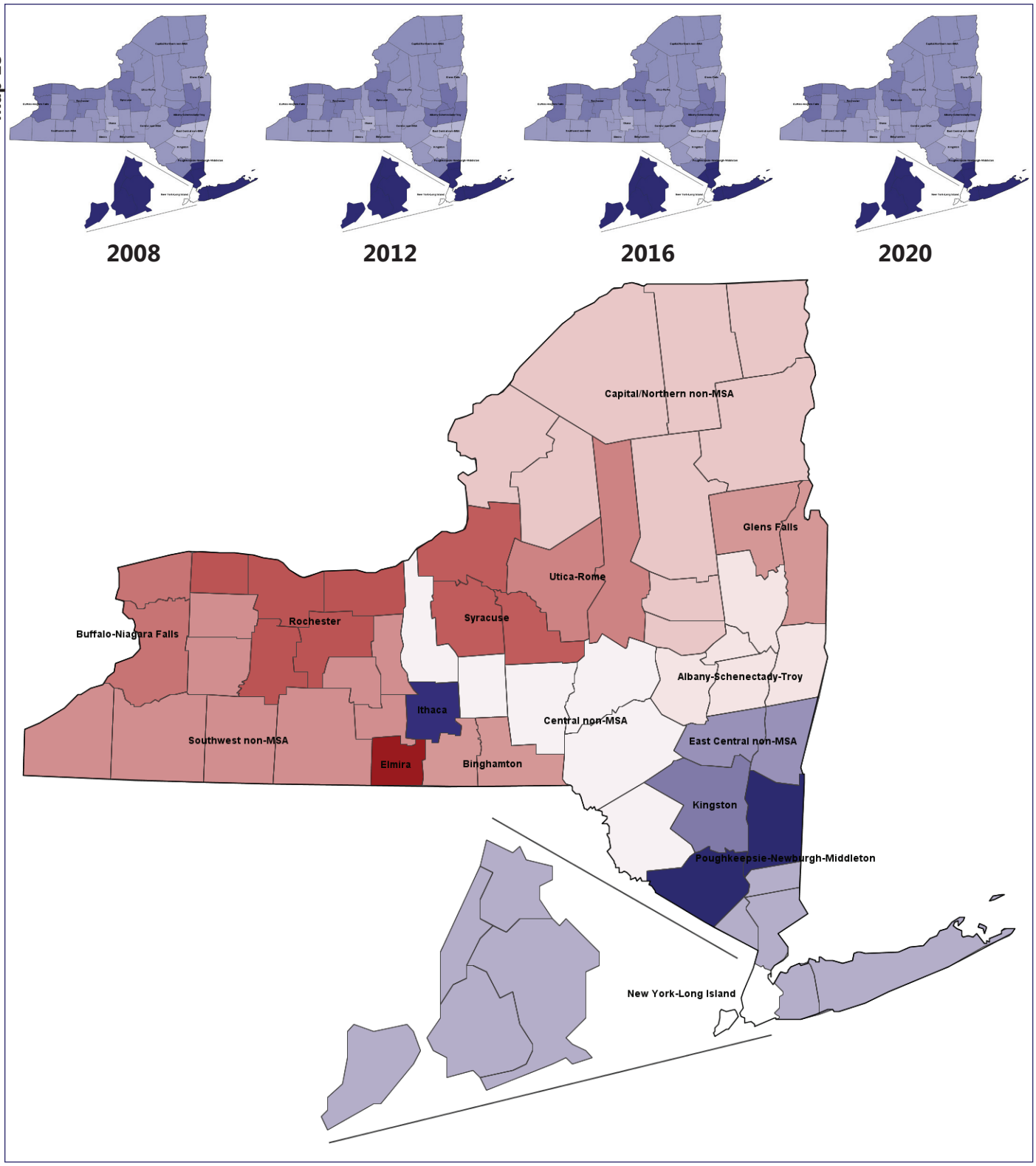
Map 17



Map 17: State of New York Employment Impact Contributions by MSA, 2008. Relative New York employment contributions for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 18



Map 18: Change in Share of State of New York Employment Impact Contribution by MSA, 2008 - 2020. Percentage change in the relative contribution to total New York employment impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in the Poughkeepsie-Newburgh-Middleton MSA (+3.46%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in the Elmira MSA (-5.80%). The four figures at the top display State of New York employment impact contribution by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 25

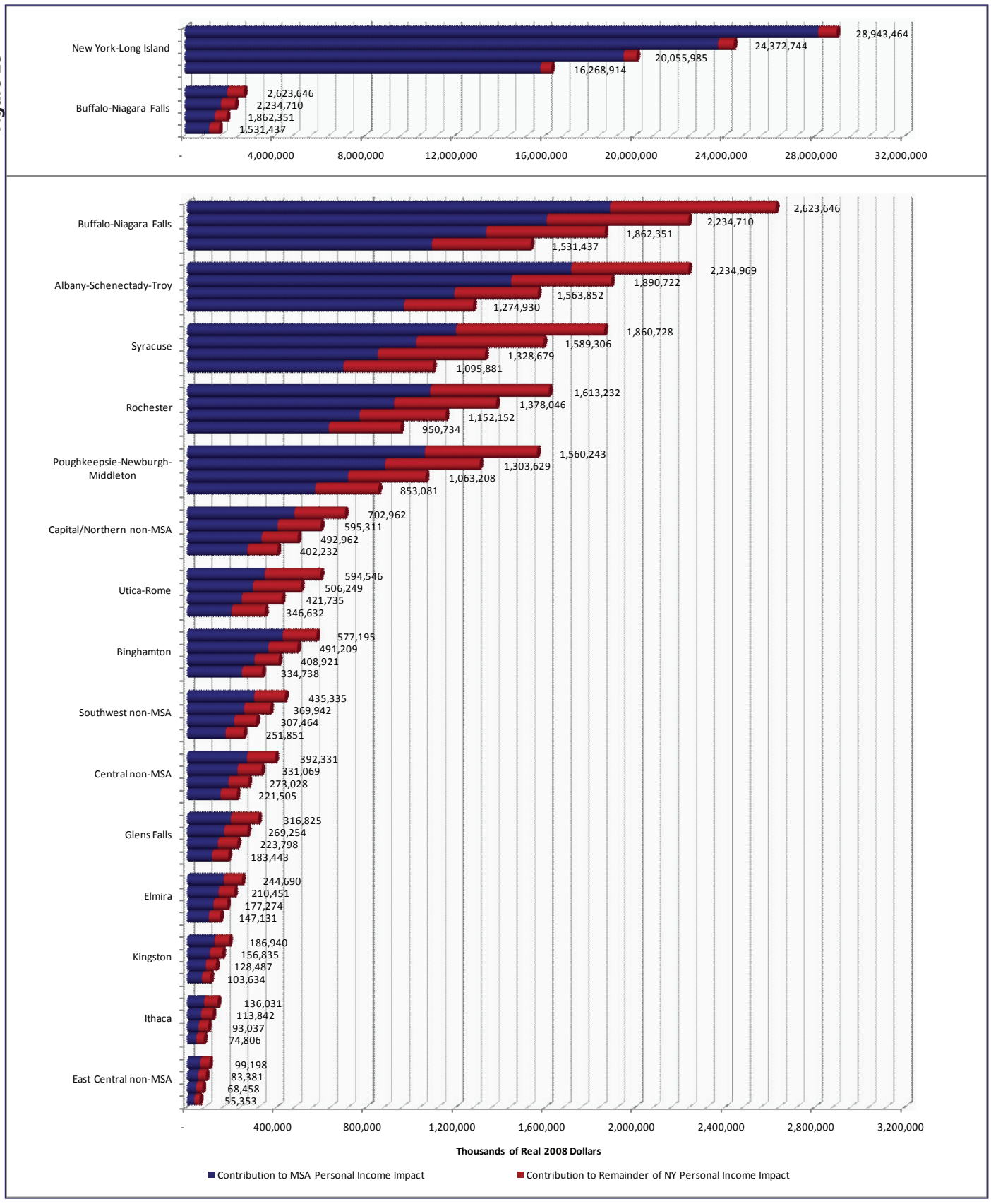


Figure 25: State of New York Personal Income Impact Contributions by MSA, 2008 - 2020. Contributions to total personal income impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s). The blue bar indicates impact contributions that occur within the MSA, and the red bar indicates impact contributions that occur within the remainder of the State of New York.

and was $3.084 billion (65.69% of the state total). Of this amount, $2.933 billion (95.10%) occurred in the MSA itself, and $150.982 million (4.90%) occurred in the remainder of the State of New York. The smallest MSA contribution to the State of New York local tax revenue impact resulted from the Private Practice of Medicine in the East Central non-MSA region, and was $11.211 million (24 hundredths of one percent of the state total). Of this amount, $5.414 million (48.29%) occurred in the MSA itself, and $5.796 million (51.71%) occurred in the remainder of the State of New York.

By 2020, the largest MSA contribution to the State of New York local tax revenue impact is projected to result from the Private Practice of Medicine in the New York-Long Island MSA, and is $5.497 billion (66.29% of the state total). Of this amount, $5.232 billion (95.18%) occurs in the MSA itself, and $264.826 million (4.82%) occurs in the remainder of the State of New York. The smallest MSA contribution to the State of New York local tax revenue impact is projected to result from the Private Practice of Medicine in the East Central non-MSA region, and is $20.111 million (24 hundredths of one percent of the state total). Of this

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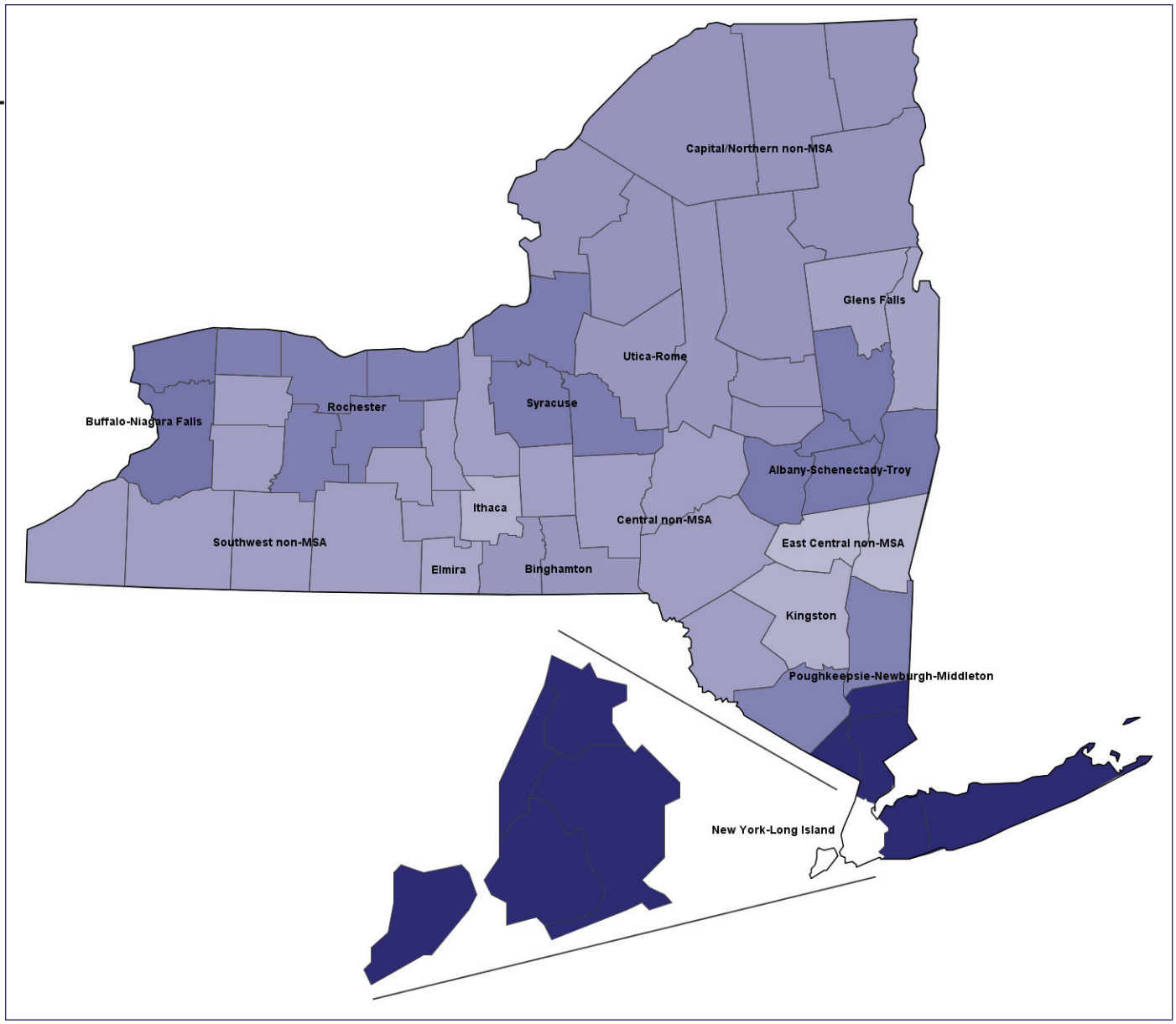
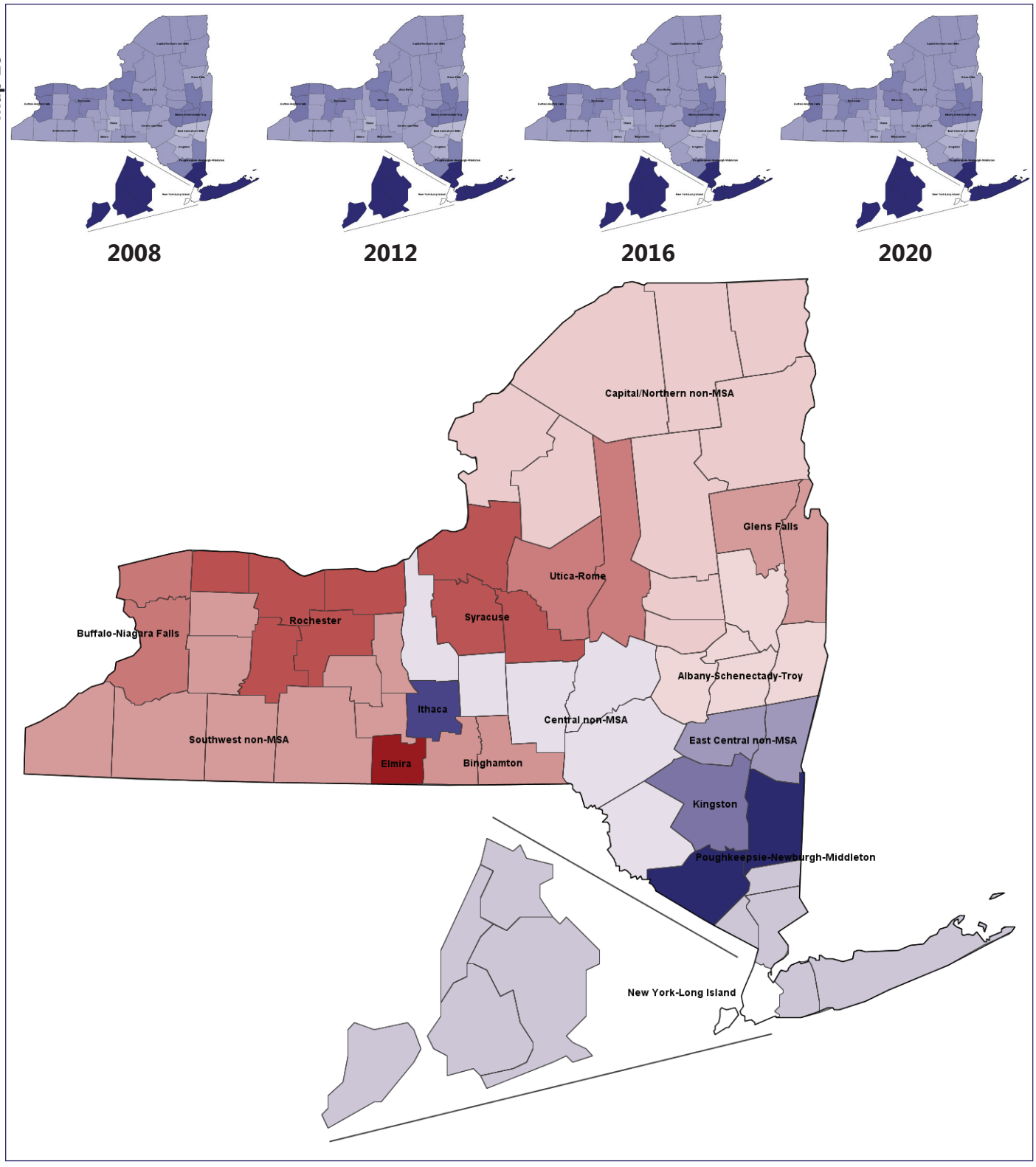
Map 19



Map 19: State of New York Personal Income Impact Contributions by MSA, 2008. Relative New York personal income contributions for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 20



Map 20: Change in Share of State of New York Personal Income Impact Contribution by MSA, 2008 - 2020. Percentage change in the relative contribution to total New York personal income impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in the Poughkeepsie-Newburgh-Middleton MSA (+3.64%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in the Elmira MSA (-5.76%). The four figures at the top display State of New York employment impact contribution by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 26

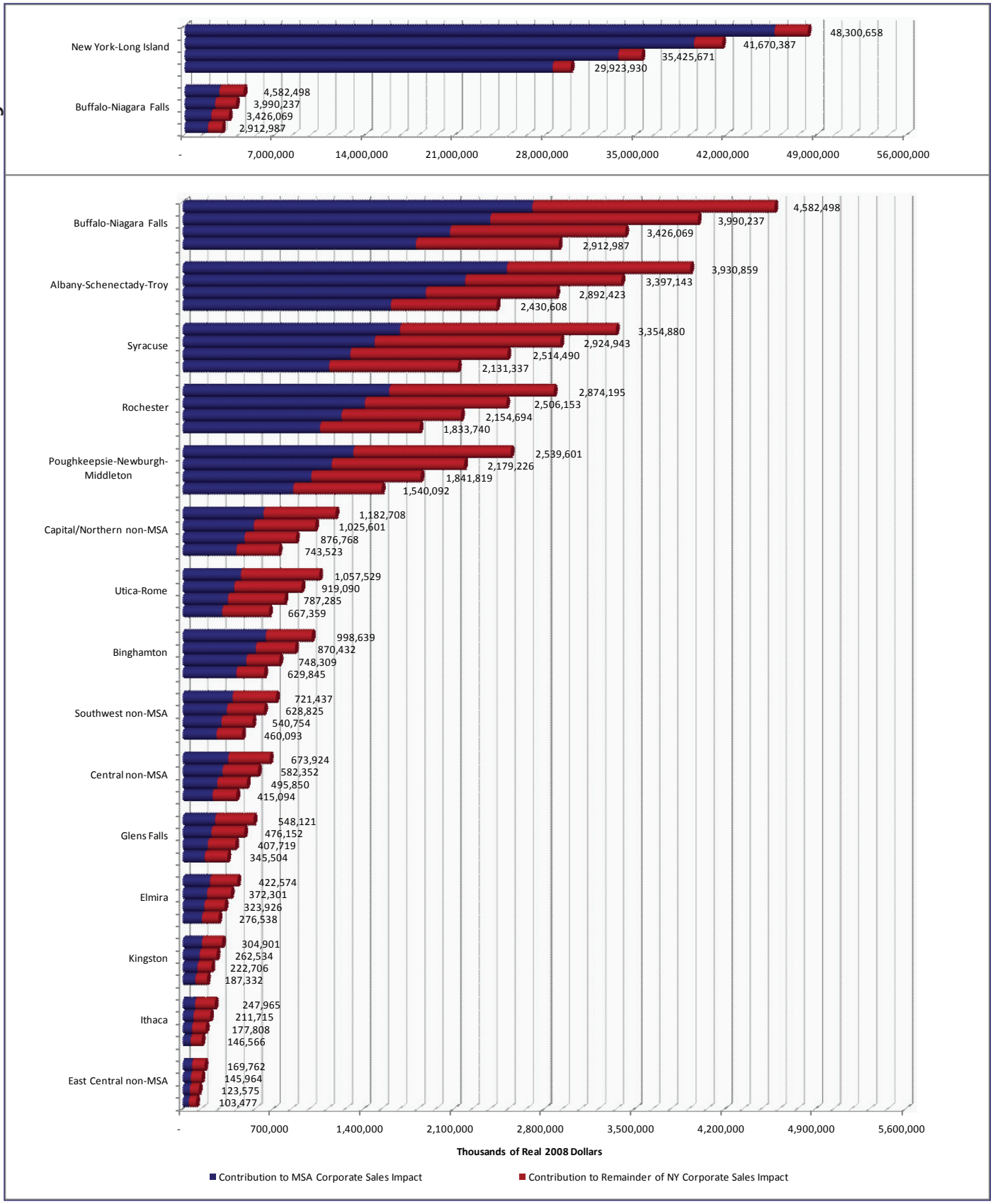


Figure 26: State of New York Corporate Sales Impact Contributions by MSA, 2008 - 2020. Contributions to total corporate sales impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s). The blue bar indicates impact contributions that occur within the MSA, and the red bar indicates impact contributions that occur within the remainder of the State of New York.

amount, $9.844 million (48.95%) occurs in the MSA itself, and $10.267 million (51.05%) occurs in the remainder of the State of New York.

Contributions to the local tax revenue impact in the State of New York resulting from the Private Practice of Medicine in each MSA are listed in Table 12 (page 69), and are displayed in Figure 28 (page 66).

The relative contribution to tax revenue impact for 2008 by MSA is displayed in Map 23 (page 67). By 2020, the largest increase in share of contributions to tax revenue impact occurs in the Poughkeepsie-Newburgh-Middleton MSA (+3.67%) and the largest decrease occurs in the Elmira MSA (-5.84%). Percentage changes in share of relative contribution to tax revenue impact from 2008 to 2020 by MSA are displayed in Map 24 (page 68).

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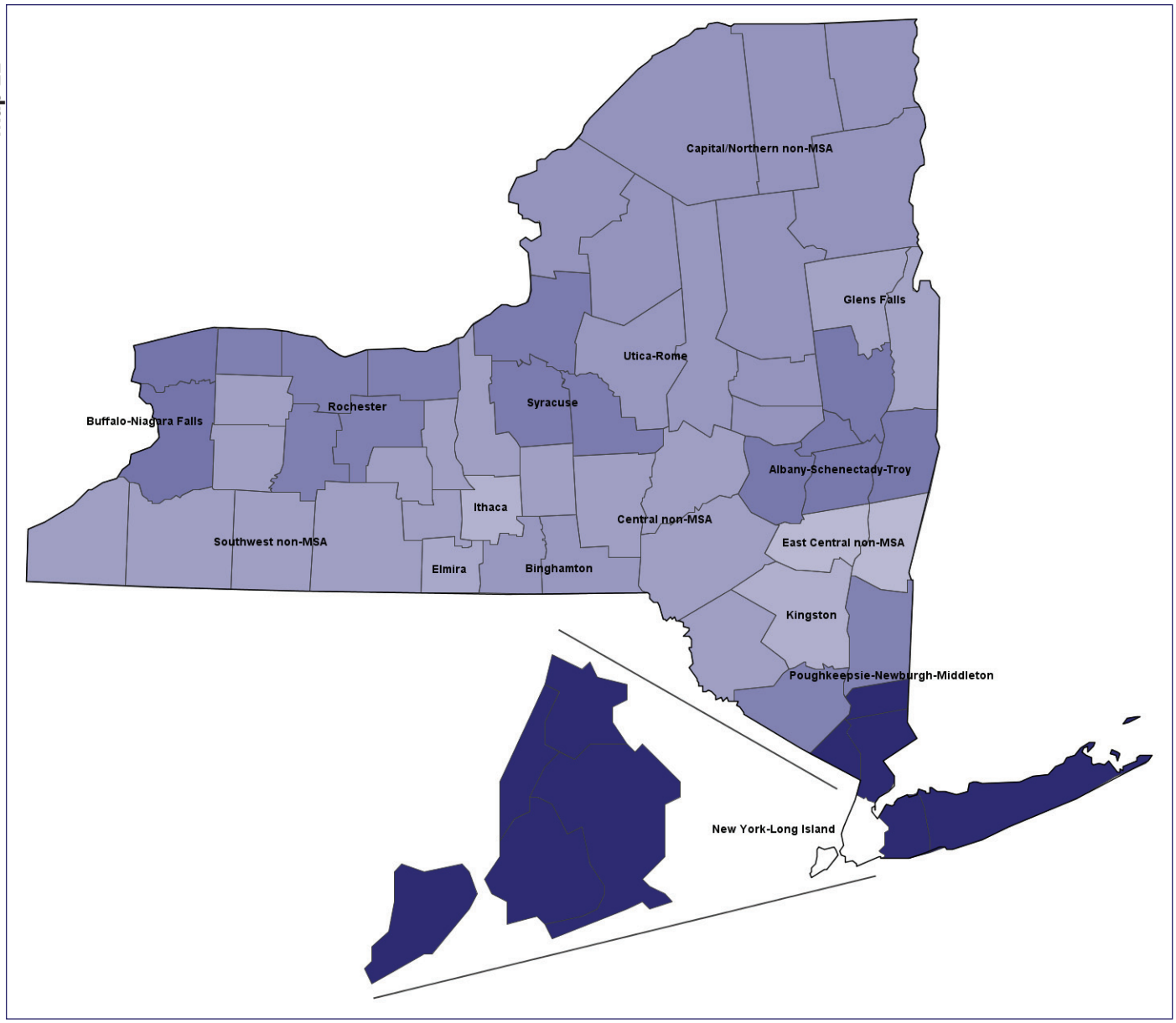
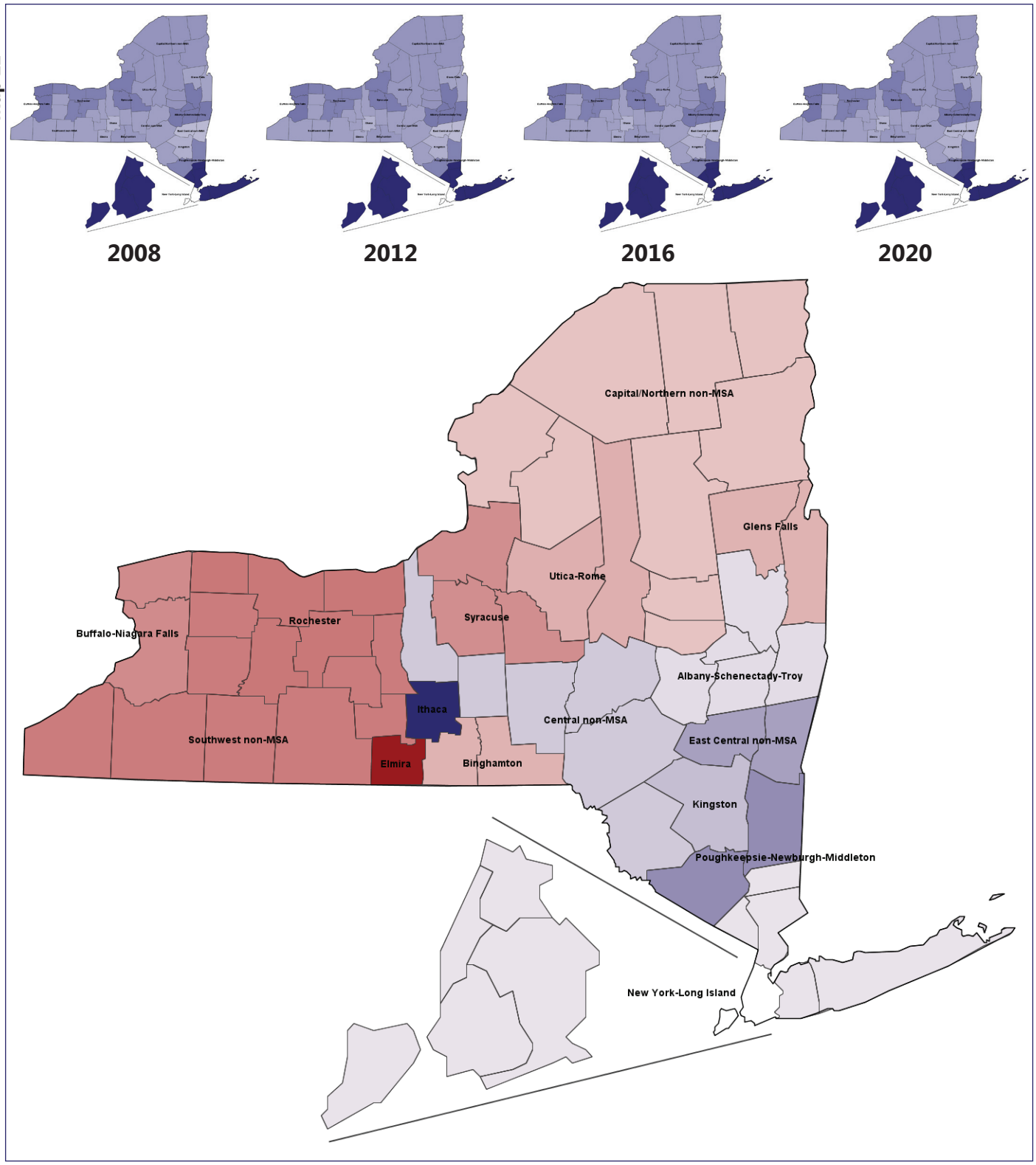
Map 21



Map 21: State of New York Corporate Sales Impact Contributions by MSA, 2008. Relative New York corporate sales contributions for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 22



Map 22: Change in Share of State of New York Corporate Sales Impact Contribution by MSA, 2008 - 2020. Percentage change in the relative contribution to total New York corporate sales impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in the Poughkeepsie-Newburgh-Middleton MSA (+2.61%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in the Elmira MSA (-4.91%). The four figures at the top display State of New York employment impact contribution by MSA for 2008, 2012, 2016, and 2020, as indicated.

Figure 27

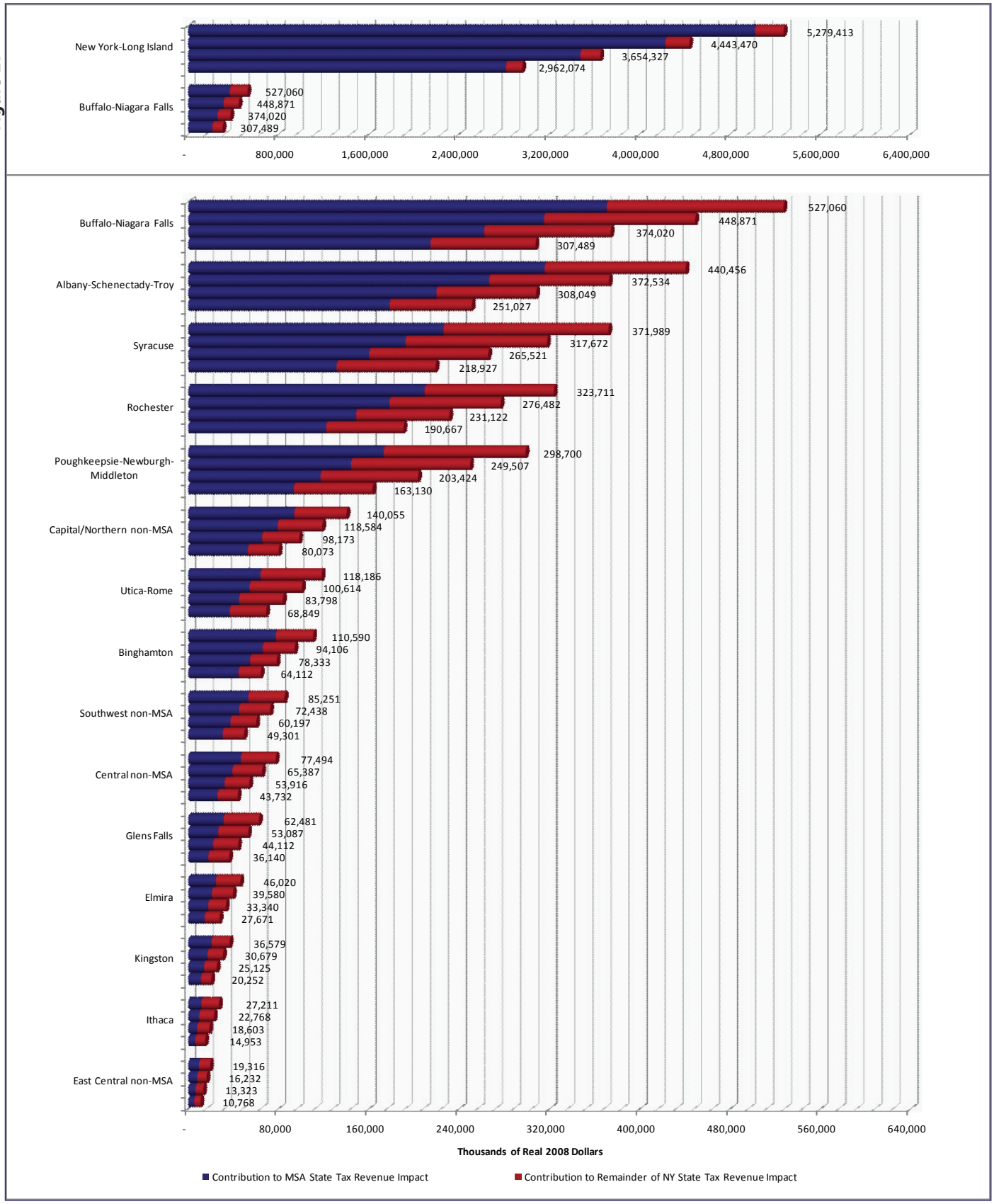


Figure 27: State of New York State Tax Revenue Impact Contributions by MSA, 2008 - 2020. Contributions to New York state tax revenue impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s). The blue bar indicates impact contributions that occur within the MSA, and the red bar indicates impact contributions that occur within the remainder of the State of New York.

Figure 28

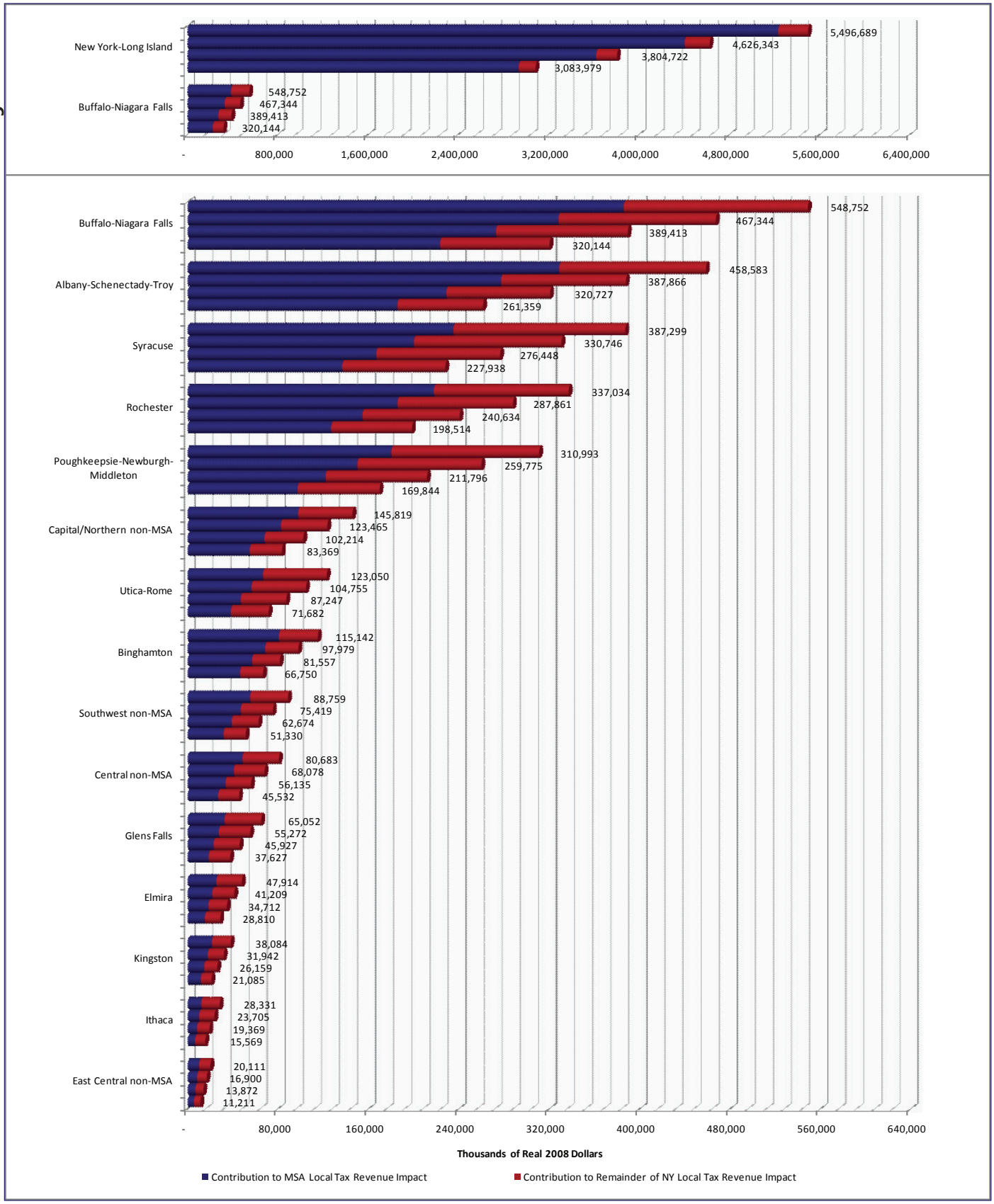
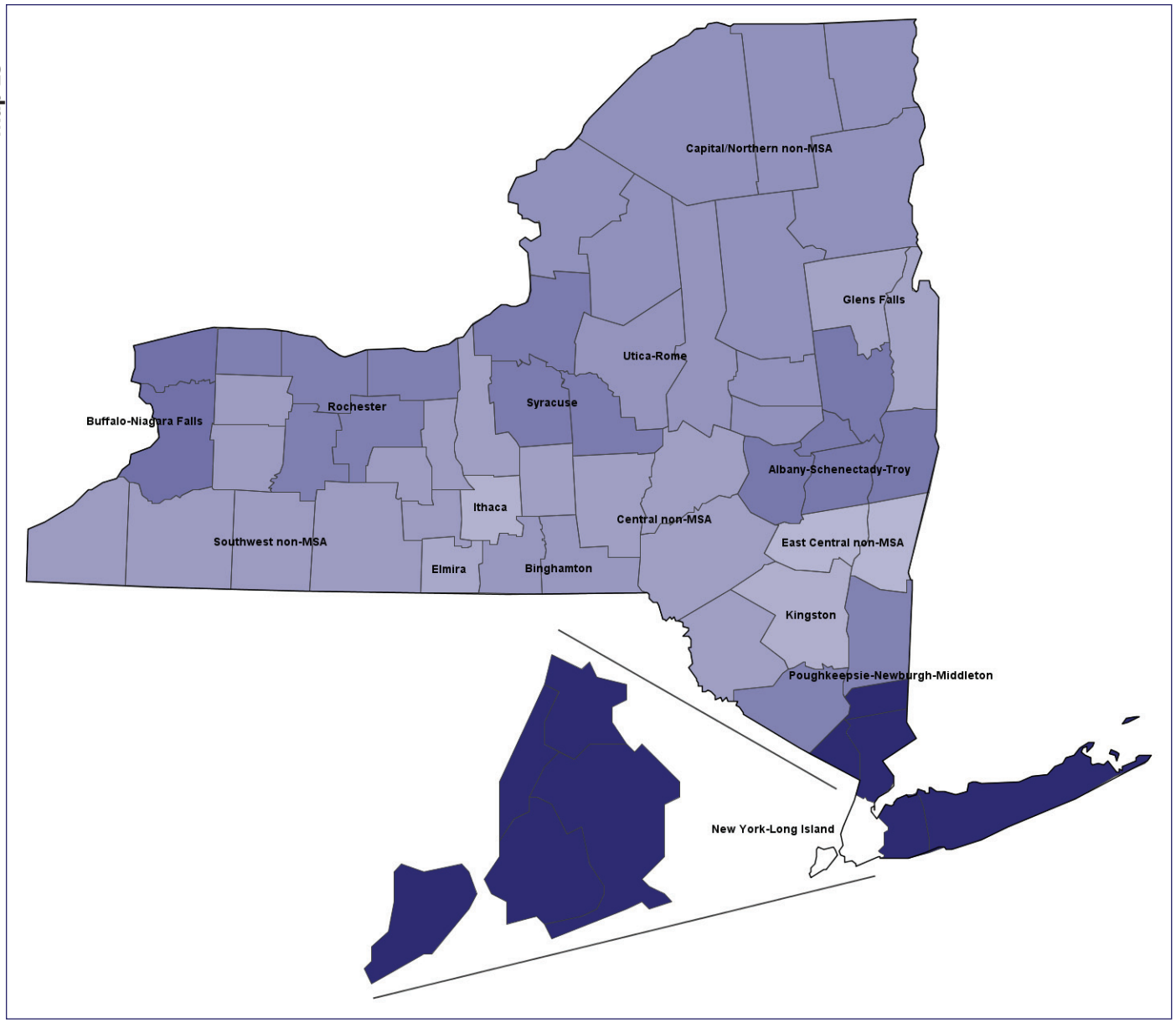


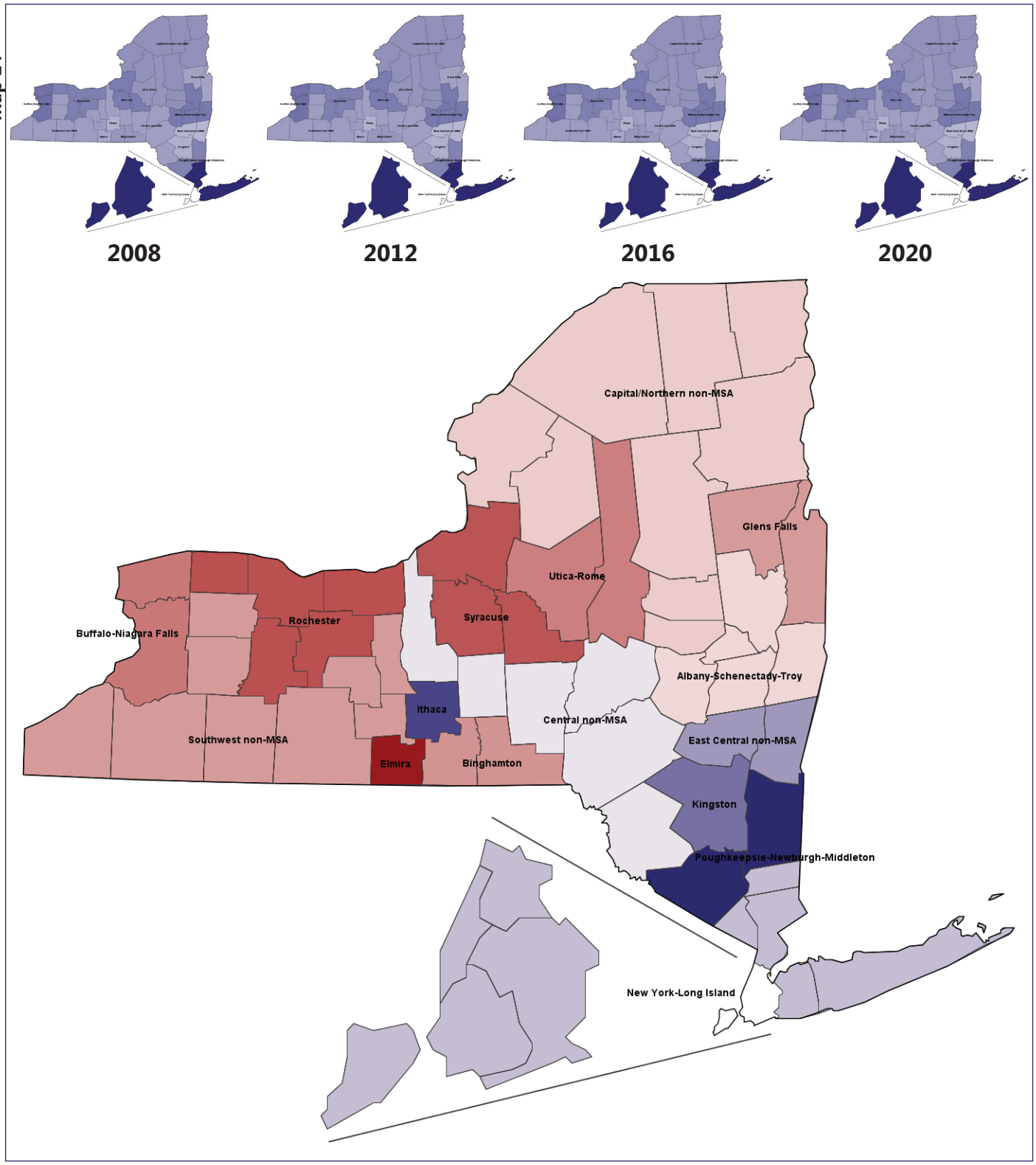
Figure 28: State of New York Local Tax Revenue Impact Contribution by MSA, 2008 - 2020. Contribution to New York local tax revenue impact for each MSA and MSA-equivalent, reported in thousands of real 2008 dollars ($1,000s). The blue bar indicates impact contributions that occur within the MSA, and the red bar indicates impact contributions that occur within the remainder of the State of New York.

Map 23



Map 23: State of New York Tax Revenue Impact Contributions by MSA, 2008. Relative New York tax revenue contributions for each MSA and MSA-equivalent in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 24



Map 24: Change in Share of State of New York Tax Revenue Impact Contribution by MSA, 2008 - 2020. Percentage change in the relative contribution to total New York tax revenue impact between 2008 and 2020 for each MSA and MSA-equivalent in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in the Poughkeepsie-Newburgh-Middleton MSA (+3.67%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in the Elmira MSA (-5.84%). The four figures at the top display State of New York employment impact contribution by MSA for 2008, 2012, 2016, and 2020, as indicated.

Table 12

MSA Name	2008		2012		2016		2020	
Concept	MSA	Rest of NY	MSA	Rest of NY	MSA	Rest of NY	MSA	Rest of NY
Albany-Schenectady-Troy								
Total Employment	14,378	5,846	16,398	6,643	18,527	7,491	20,570	8,308
Total Personal Income	966,710	308,220	1,191,904	371,949	1,445,473	445,248	1,712,822	522,147
Total Corporate Sales	1,612,398	818,210	1,881,896	1,010,527	2,187,647	1,209,496	2,510,472	1,420,387
NY State Tax Revenue	178,189	72,839	219,649	88,400	266,335	106,199	315,550	124,906
NY Local Tax Revenue	185,522	75,836	228,689	92,038	277,296	110,570	328,537	130,046
Binghamton								
Total Employment	3,405	1,916	3,866	2,171	4,335	2,435	4,780	2,686
Total Personal Income	244,791	89,947	300,462	108,459	361,967	129,242	426,298	150,897
Total Corporate Sales	415,774	214,072	492,372	255,937	565,897	304,535	642,975	355,664
NY State Tax Revenue	44,474	19,638	54,588	23,745	65,760	28,346	77,446	33,145
NY Local Tax Revenue	46,304	20,446	56,834	24,722	68,467	29,513	80,633	34,509
Buffalo-Niagara Falls								
Total Employment	16,377	9,261	18,454	10,466	20,643	11,736	22,716	12,946
Total Personal Income	1,091,329	440,108	1,332,845	529,506	1,603,397	631,313	1,886,125	737,521
Total Corporate Sales	1,806,177	1,106,810	2,071,082	1,354,987	2,381,937	1,608,300	2,707,739	1,874,760
NY State Tax Revenue	214,404	93,085	261,838	112,182	314,971	133,900	370,492	156,569
NY Local Tax Revenue	223,228	96,916	272,614	116,799	327,933	139,411	385,739	163,012
Elmira								
Total Employment	1,172	1,111	1,307	1,247	1,446	1,383	1,574	1,511
Total Personal Income	97,189	49,942	117,642	59,632	140,139	70,311	163,363	81,326
Total Corporate Sales	148,838	127,700	167,717	156,209	189,091	183,210	211,275	211,298
NY State Tax Revenue	14,472	13,198	17,516	15,824	20,864	18,716	24,320	21,700
NY Local Tax Revenue	15,068	13,742	18,237	16,475	21,723	19,486	25,321	22,594
Glens Falls								
Total Employment	1,667	1,461	1,883	1,658	2,110	1,866	2,325	2,064
Total Personal Income	111,582	71,861	136,983	86,815	165,414	103,841	195,200	121,625
Total Corporate Sales	170,505	174,999	194,761	212,958	222,257	253,895	251,077	297,045
NY State Tax Revenue	17,814	18,326	21,866	22,245	26,402	26,684	31,154	31,327
NY Local Tax Revenue	18,547	19,080	22,766	23,161	27,489	27,783	32,437	32,616
Ithaca								
Total Employment	572	760	660	878	754	1,003	846	1,126
Total Personal Income	40,799	34,008	51,208	41,828	63,026	50,816	75,652	60,379
Total Corporate Sales	61,775	84,792	72,293	105,515	83,890	127,825	96,211	151,754
NY State Tax Revenue	6,210	8,743	7,794	10,809	9,592	13,176	11,513	15,697
NY Local Tax Revenue	6,465	9,103	8,115	11,254	9,987	13,718	11,987	16,344
Kingston								
Total Employment	997	643	1,144	741	1,300	846	1,450	948
Total Personal Income	66,560	37,074	83,078	45,409	101,782	55,054	121,668	65,272
Total Corporate Sales	98,403	88,930	113,613	109,094	130,792	131,742	148,966	155,934
NY State Tax Revenue	11,180	9,072	13,955	11,170	17,096	13,583	20,436	16,143
NY Local Tax Revenue	11,641	9,445	14,529	11,630	17,799	14,143	21,277	16,808
New York-Long Island								
Total Employment	191,902	10,789	219,855	12,303	249,729	13,897	278,629	15,444
Total Personal Income	15,794,938	473,975	19,479,597	576,387	23,679,442	693,302	28,126,344	817,119
Total Corporate Sales	28,517,372	1,406,558	33,614,469	1,811,202	39,492,301	2,178,086	45,731,411	2,569,247
NY State Tax Revenue	2,817,060	145,014	3,476,717	177,610	4,228,618	214,852	5,025,055	254,358
NY Local Tax Revenue	2,932,998	150,982	3,619,803	184,919	4,402,649	223,694	5,231,863	264,826
Poughkeepsie-Newburgh-Middleton								
Total Employment	6,727	4,597	7,761	5,326	8,860	6,108	9,930	6,875
Total Personal Income	571,918	281,164	717,439	345,769	883,026	420,602	1,059,995	500,248
Total Corporate Sales	855,725	684,367	995,606	846,213	1,153,885	1,025,341	1,322,055	1,217,545
NY State Tax Revenue	93,366	69,764	117,105	86,319	144,122	105,385	172,993	125,706
NY Local Tax Revenue	97,209	72,635	121,925	89,872	150,053	109,722	180,113	130,880

Table 12, continued

MSA Name	2008		2012		2016		2020	
Concept	MSA	Rest of NY	MSA	Rest of NY	MSA	Rest of NY	MSA	Rest of NY
Rochester								
Total Employment	9,665	7,021	10,873	7,898	12,142	8,820	13,340	9,693
Total Personal Income	631,178	319,556	769,035	383,117	923,074	454,972	1,083,630	529,602
Total Corporate Sales	1,063,539	770,201	1,230,147	924,547	1,410,789	1,095,364	1,599,739	1,274,456
NY State Tax Revenue	121,910	68,757	148,484	82,638	178,178	98,304	209,118	114,594
NY Local Tax Revenue	126,928	71,586	154,595	86,039	185,511	102,350	217,724	119,310
Syracuse								
Total Employment	9,347	8,797	10,523	9,905	11,752	11,064	12,913	12,164
Total Personal Income	697,612	398,268	850,796	477,883	1,021,436	567,870	1,199,284	661,444
Total Corporate Sales	1,134,152	997,185	1,297,920	1,216,570	1,485,741	1,439,202	1,682,185	1,672,696
NY State Tax Revenue	131,354	87,574	160,179	105,341	192,287	125,386	225,747	146,242
NY Local Tax Revenue	136,760	91,178	166,772	109,677	200,200	130,546	235,038	152,261
Utica-Rome								
Total Employment	2,720	3,141	3,071	3,551	3,438	3,985	3,785	4,398
Total Personal Income	198,242	148,390	243,105	178,630	293,194	213,055	345,579	248,968
Total Corporate Sales	305,731	361,627	349,618	437,667	398,843	520,247	450,385	607,144
NY State Tax Revenue	36,677	32,171	44,973	38,825	54,234	46,380	63,919	54,267
NY Local Tax Revenue	38,187	33,495	46,823	40,423	56,466	48,289	66,550	56,500
Capital/Northern non-MSA								
Total Employment	4,273	2,653	4,864	3,006	5,484	3,384	6,076	3,746
Total Personal Income	269,227	133,005	332,594	160,368	403,526	191,786	478,259	224,704
Total Corporate Sales	415,620	327,903	478,240	398,528	550,213	475,388	626,055	556,653
NY State Tax Revenue	52,753	27,320	65,185	32,988	79,105	39,479	93,773	46,282
NY Local Tax Revenue	54,924	28,444	67,868	34,346	82,360	41,104	97,632	48,187
East Central non-MSA								
Total Employment	417	440	478	507	542	577	604	646
Total Personal Income	32,217	23,136	40,137	28,322	49,088	34,293	58,589	40,610
Total Corporate Sales	47,954	55,524	55,324	68,251	63,654	82,310	72,458	97,304
NY State Tax Revenue	5,200	5,567	6,478	6,845	7,922	8,310	9,455	9,861
NY Local Tax Revenue	5,414	5,796	6,745	7,127	8,248	8,652	9,844	10,267
Central non-MSA								
Total Employment	2,469	1,498	2,818	1,714	3,184	1,941	3,535	2,160
Total Personal Income	149,158	72,346	184,898	88,130	225,036	106,033	267,450	124,881
Total Corporate Sales	231,391	183,703	267,434	228,416	308,505	273,847	351,850	322,074
NY State Tax Revenue	25,913	17,819	32,116	21,801	39,079	26,308	46,435	31,059
NY Local Tax Revenue	26,980	18,552	33,438	22,698	40,687	27,391	48,346	32,337
Southwest non-MSA								
Total Employment	2,882	1,687	3,255	1,914	3,646	2,154	4,016	2,384
Total Personal Income	171,327	80,524	210,249	97,215	253,671	116,271	299,120	136,215
Total Corporate Sales	262,395	197,698	300,215	240,539	342,183	286,642	386,143	335,295
NY State Tax Revenue	30,401	18,900	37,284	22,913	44,961	27,477	52,991	32,260
NY Local Tax Revenue	31,652	19,678	38,819	23,856	46,811	28,608	55,172	33,587

Table 12: State of New York Economic Impact Contributions by MSA, 2008 - 2020. Total Employment, Total Personal Income, Total Corporate Sales, New York State Tax Revenue, and New York Local Tax Revenue during years 2008, 2012, 2016, and 2020 for each MSA and MSA-equivalent in the State of New York. The share of the impact contributions that occur in each MSA and the share of the impact contributions that occur in the remainder of New York is indicated. Employment is reported in Full-Time Equivalents (FTE), and all other values are reported in thousands of real 2008 dollars ($1,000s).

County Contributions to Impacts

Contributions to State of New York economic impacts resulting from the Private Practice of Medicine in each county is reported in somewhat less detail than contributions resulting from the Private Practice of Medicine in each MSA. As is the case above, this is primarily due to the unreasonable length of county-level concept-specific figures for each of the five core concepts – each would be four pages long – that correspond to the MSA-level concept-specific figures that are presented in the previous section. However the same level of detail is available in county-level Table 13: State of New York Economic Impact Contributions by County, 2008 - 2020 (page 81) as is available in MSA-level Table 12: State of New York Economic Impact Contributions by MSA, 2008 - 2020 (page 69).

Additional information regarding contributions to State of New York economic impacts by the Private Practice of Medicine in each county is available in Appendix D.

Note: The Private Practice of Medicine does not occur in Hamilton County. Therefore, no economic impact contributions are reported for that county.

Total Employment

In 2008, the largest county contribution to the State of New York total employment impact resulted from the Private Practice of Medicine in New York County, and was 47,998 (14.52% of the state total). Of this amount, 31,799 (66.25%) occurred in the county itself, and 16,199 (33.75%) occurred in the remainder of the State of New York. The smallest county contribution to the State of New York total employment impact resulted from the Private Practice of Medicine in Lewis County, and was 99 (3 hundredths of a percent of the state total). Of this amount, 63 (63.50%) occurred in the county itself, and 36 (36.50%) occurred in the remainder of the State of New York.

By 2020, the largest county contribution to the State of New York total employment impact is projected to result from the Private Practice of Medicine in New York County, and is 65,909 (13.90% of the state total). Of this amount, 43,548 (66.07%) occurs in the county itself, and 22,361 (33.93%) occurs in the remainder of the State of New York. The smallest county contribution to the State of New York total employment impact is projected to result from the Private Practice of Medicine in Lewis County, and is 137 (3 hundredths of a percent of the state total). Of this amount, 86 (63.07%) occurs in the county itself, and 50 (36.93%) occurs in the remainder of the State of New York.

Contributions to the total employment impact in the State of New York resulting from the Private Practice of Medicine in each county are listed in Table 13 (page 81).

The relative contribution to total employment impact for 2008 by county is displayed in Map 25 (page 73). By 2020, the largest increase in share of contributions to total employment impact occurs in Putnam County (+7.54%) and the largest decrease occurs in Montgomery County (-8.71%). Percentage changes in share of relative contribution to total employment impact from 2008 to 2020 by county are displayed in Map 26 (page 74).

Total Personal Income

In 2008, the largest county contribution to the State of New York total personal income impact resulted from the Private Practice of Medicine in New York County, and was $4.195 billion (17.41% of the state total). Of this amount, $3.404 billion (81.13%) occurred in the county itself, and $791.498 million (18.87%) occurred in the remainder of the State of New York. The smallest county contribution to the State of New York total personal income impact resulted from the Private Practice of Medicine in Lewis County, and was $5.887 million (2 hundredths of a percent of the state total). Of this amount, $4.188 million (71.13%) occurred in the county itself, and $1.700 million (28.87%) occurred in the remainder of the State of New York.

By 2020, the largest county contribution to the State of New York total personal income impact is projected to result from the Private Practice of Medicine in New York County, and is $7.063 billion (16.61% of the state total). Of this amount, $5.740 billion (81.27%) occurs in the county itself, and $1.323 (18.73%) occurs in the remainder of the State of New York. The smallest county contribution to

the State of New York total personal income impact is projected to result from the Private Practice of Medicine in Lewis County, and is $10.078 million (2 hundredths of a percent of the state total). Of this amount, $7.219 million (71.64%) occurs in the county itself, and $2.859 million (28.36%) occurs in the remainder of the State of New York.

Contributions to the total personal income impact in the State of New York resulting from the Private Practice of Medicine in each county are listed in Table 13 (page 81).

The relative contribution to total personal income impact for 2008 by county is displayed in Map 27 (page 75). By 2020, the largest increase in share of contributions to total personal income impact occurs in Putnam County (+7.60%) and the largest decrease occurs in Montgomery County (-8.87%). Percentage changes in share of relative contribution to total personal income impact from 2008 to 2020 by county are displayed in Map 28 (page 76).

Total Corporate Sales

In 2008, the largest county contribution to the State of New York total corporate sales impact resulted from the Private Practice of Medicine in New York County, and was $7.762 billion (17.35% of the state total). Of this amount, $5.860 billion (75.49%) occurred in the county itself, and $1.902 billion (24.51%) occurred in the remainder of the State of New York. The smallest county contribution to the State of New York total corporate sales impact resulted from the Private Practice of Medicine in Lewis County, and was $10.403 million (2 hundredths of a percent of the state total). Of this amount, $6.347 million (61.01%) occurred in the county itself, and $4.056 million (38.99%) occurred in the remainder of the State of New York.

By 2020, the largest county contribution to the State of New York total corporate sales impact is projected to result from the Private Practice of Medicine in New York County, and is $11.883 billion (16.52% of the state total). Of this amount, $8.749 billion (73.63%) occurs in the county itself, and $3.133 billion (26.37%) occurs in the remainder of the State of New York. The smallest county contribution to the State of New York total corporate sales impact is projected to result from the Private Practice of Medicine in Lewis County, and is $15.983 million (2 hundredths of a percent of the state total). Of this amount, $9.182 million (57.45%) occurs in the county itself, and $6.800 million (42.55%) occurs in the remainder of the State of New York.

Contributions to the total corporate sales impact in the State of New York resulting from the Private Practice of Medicine in each county are listed in Table 13 (page 81).

The relative contribution to total corporate sales impact for 2008 by county is displayed in Map 29 (page 77). By 2020, the largest increase in share of contributions to total corporate sales impact occurs in Saratoga County (+8.12%) and the largest decrease occurs in Montgomery County (-7.32%). Percentage changes in share of relative contribution to total corporate sales impact from 2008 to 2020 by county are displayed in Map 30 (page 78).

New York State Tax Revenue

In 2008, the largest county contribution to the State of New York state tax revenue impact resulted from the Private Practice of Medicine in New York County, and was $707.055 million (15.68% of the state total). Of this amount, $251.097 million (35.51%) occurred in the county itself, and $455.958 million (64.49%) occurred in the remainder of the State of New York. The smallest county contribution to the State of New York state tax revenue impact resulted from the Private Practice of Medicine in Lewis County, and was $1.184 million (3 hundredths of a percent of the state total). Of this amount, $748 thousand (63.19%) occurred in the county itself, and $436 thousand (36.81%) occurred in the remainder of the State of New York.

By 2020, the largest county contribution to the State of New York state tax revenue impact is projected to result from the Private Practice of Medicine in New York County, and is $1.190 billion (14.94% of the state total). Of this amount, $423.409 million (35.59%) occurs in the county itself, and $766.427 million (64.41%) occurs in the remainder of the State of New York. The smallest county contribution to the State of New York state tax revenue impact is projected to result from the Private Practice of Medicine in Lewis County, and is $2.028 million (3 hundredths of a percent of the state total). Of this amount, $1.290 million (63.59%) occurs in the county itself, and $738 thousand (36.41%) occurs in the remainder of the State of New York.

Contributions to the state tax revenue impact in the State of New York resulting from the Private Practice of Medicine in each county are listed in Table 13 (page 81).

New York Local Tax Revenue

In 2008, the largest county contribution to the State of New York local tax revenue impact resulted from the Private Practice of Medicine in New York County, and was $736.154 million (15.68% of the state total). Of this amount, $261.431 million (35.51%) occurred in the county itself, and $474.724 million (64.49%) occurred in the remainder of the State of New York. The smallest county contribution to the State of New York local tax revenue impact resulted from the Private Practice of Medicine in Lewis County, and was $1.233 million (3 hundredths of a percent of the state total). Of this amount, $779 thousand (63.19%) occurred in the county itself, and $454 thousand (36.81%) occurred in the remainder of the State of New York.

By 2020, the largest county contribution to the State of New York local tax revenue impact is projected to

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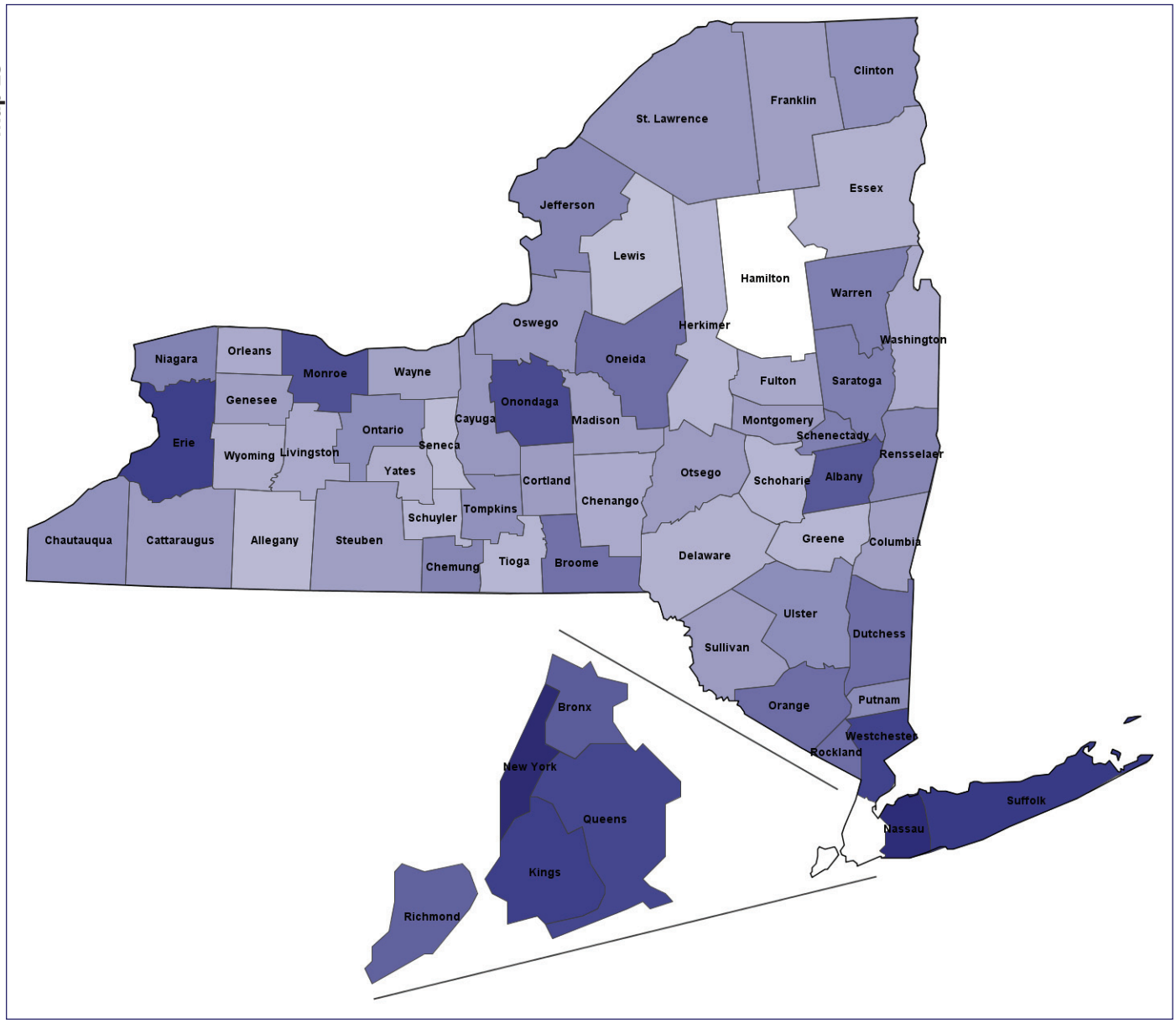
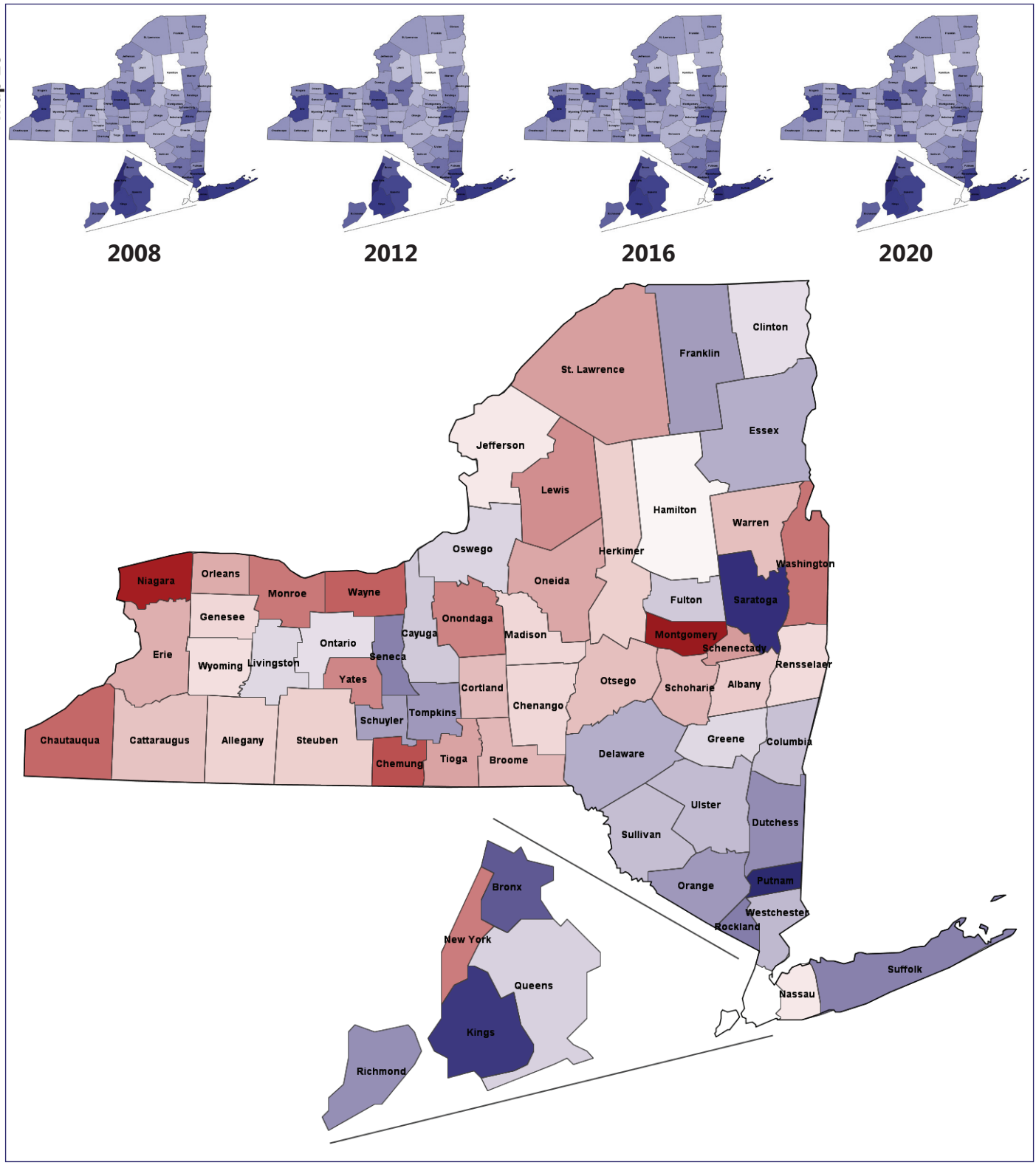
Map 25



Map 25: State of New York Employment Impact Contributions by County, 2008. Relative New York employment contributions for each county in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 26



Map 26: Change in Share of State of New York Employment Impact Contribution by County, 2008 - 2020. Percentage change in the relative contribution to total New York employment impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in Putnam County (+7.54%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in Montgomery County (-8.71%). The four figures at the top display State of New York employment impact contribution by county for 2008, 2012, 2016, and 2020, as indicated.

result from the Private Practice of Medicine in New York County, and is $1.239 billion (14.94% of the state total). Of this amount, $440.835 million (35.59%) occurs in the county itself, and $797.970 million (64.41%) occurs in the remainder of the State of New York. The smallest county contribution to the State of New York local tax revenue impact is projected to result from the Private Practice of Medicine in Lewis County, and is $2.112 million (3 hundredths of a percent of the state total). Of this amount, $1.343 million (63.59%) occurs in the county itself, and $769 thousand (36.41%) occurs in the remainder of the State of New York.

Contributions to the local tax revenue impact in the State of New York resulting from the Private Practice of Medicine in each county are listed in Table 13 (page 81).

The relative contribution to tax revenue impact for 2008 by county is displayed in Map 31 (page 79). By 2020, the largest increase in share of contributions to tax revenue impact occurs in Putnam County (+7.57%) and the largest decrease occurs in Montgomery County (-8.89%). Percentage changes in share of relative contribution to tax revenue impact from 2008 to 2020 by county are displayed in Map 32 (page 80).

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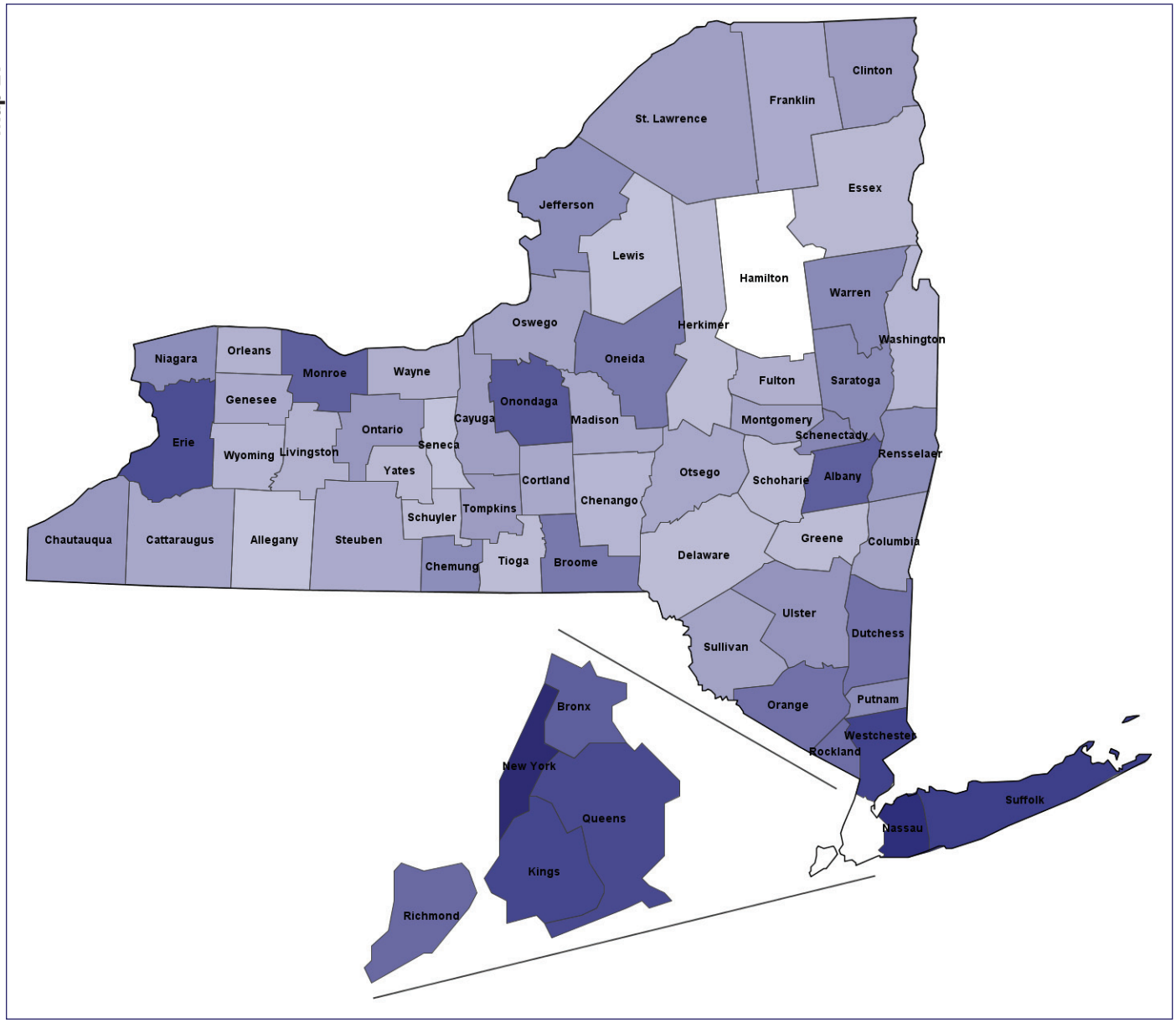
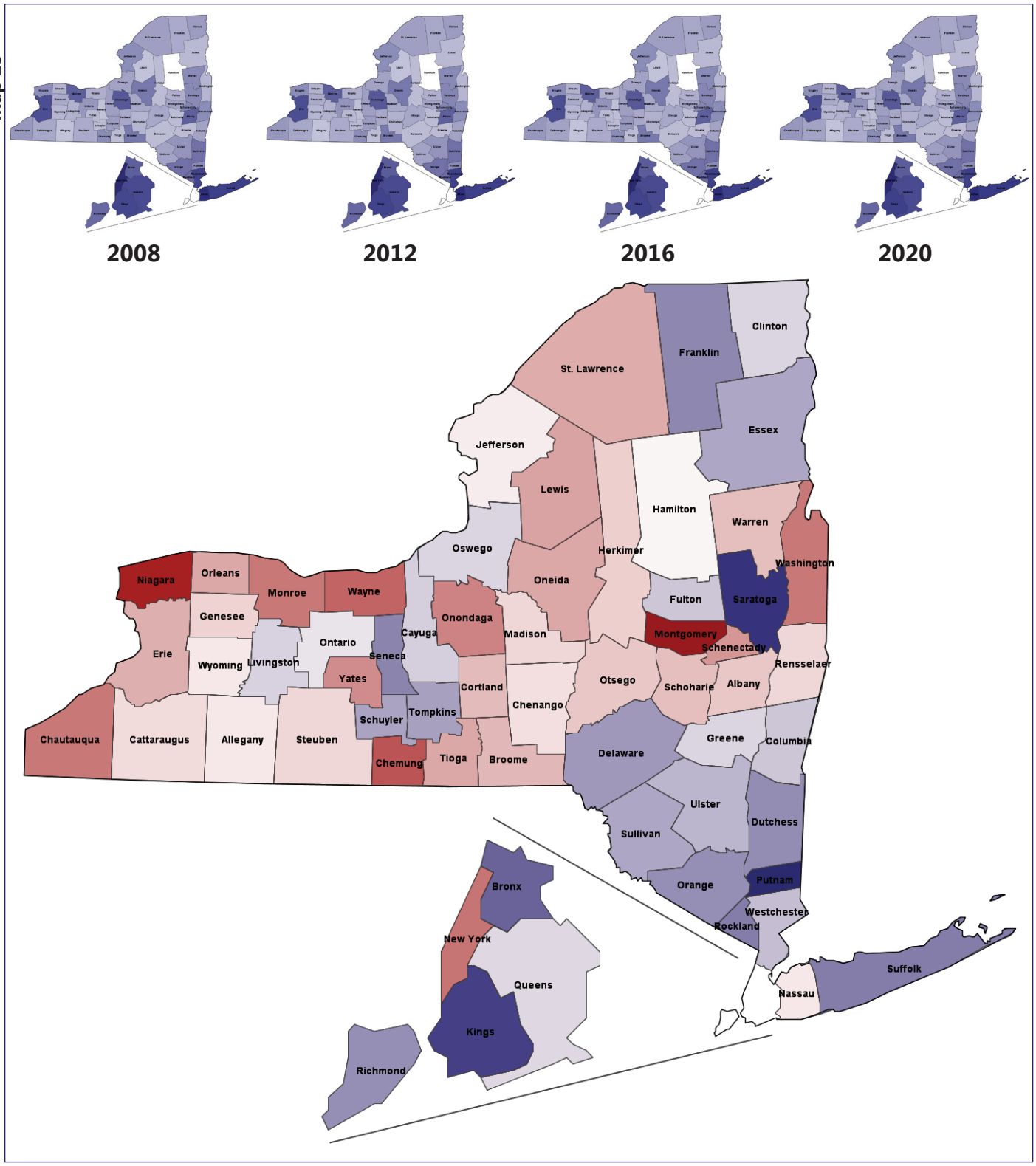
Map 27



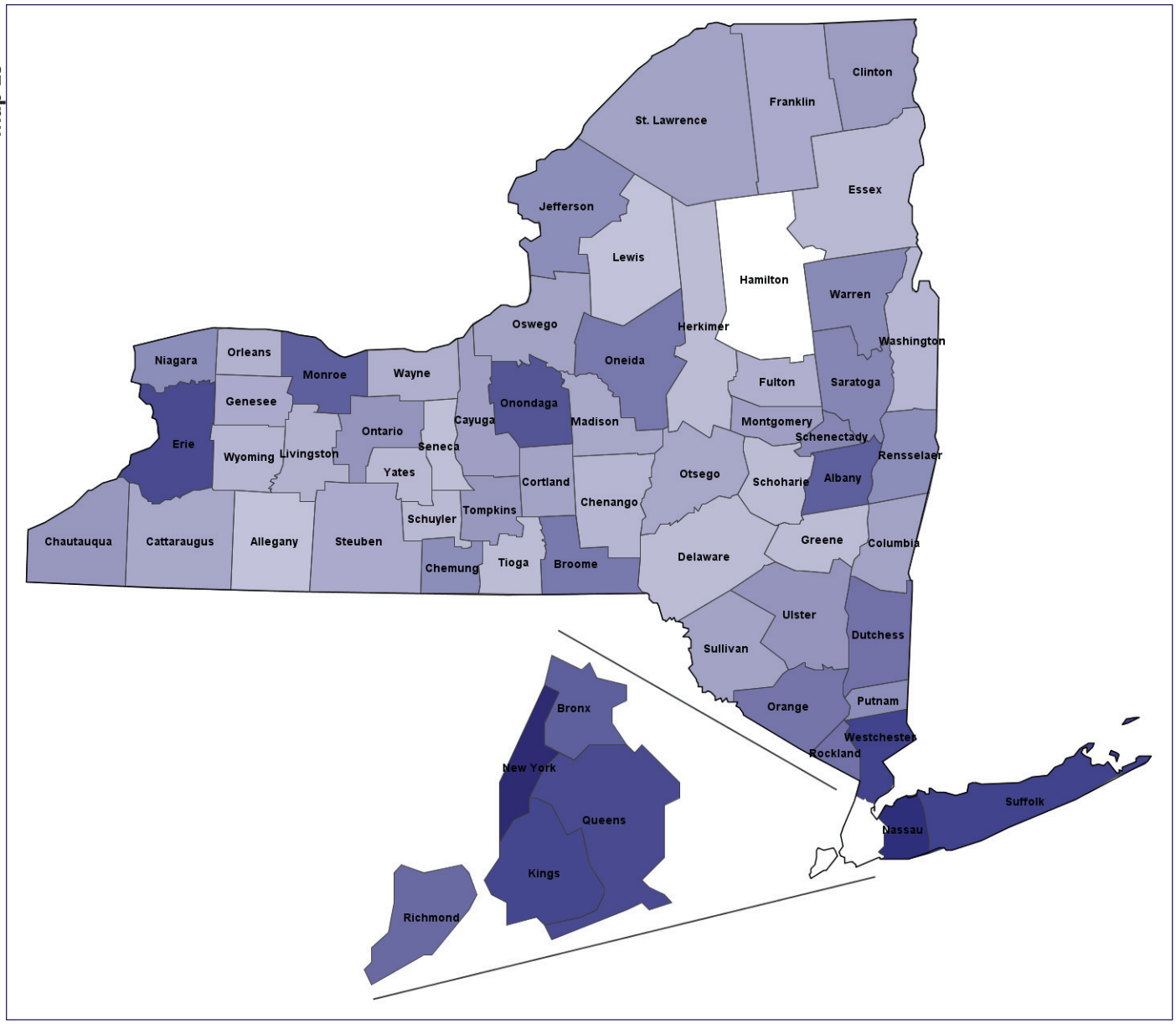
Map 27: State of New York Personal Income Impact Contributions by County, 2008. Relative New York personal income contributions for each county in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 28



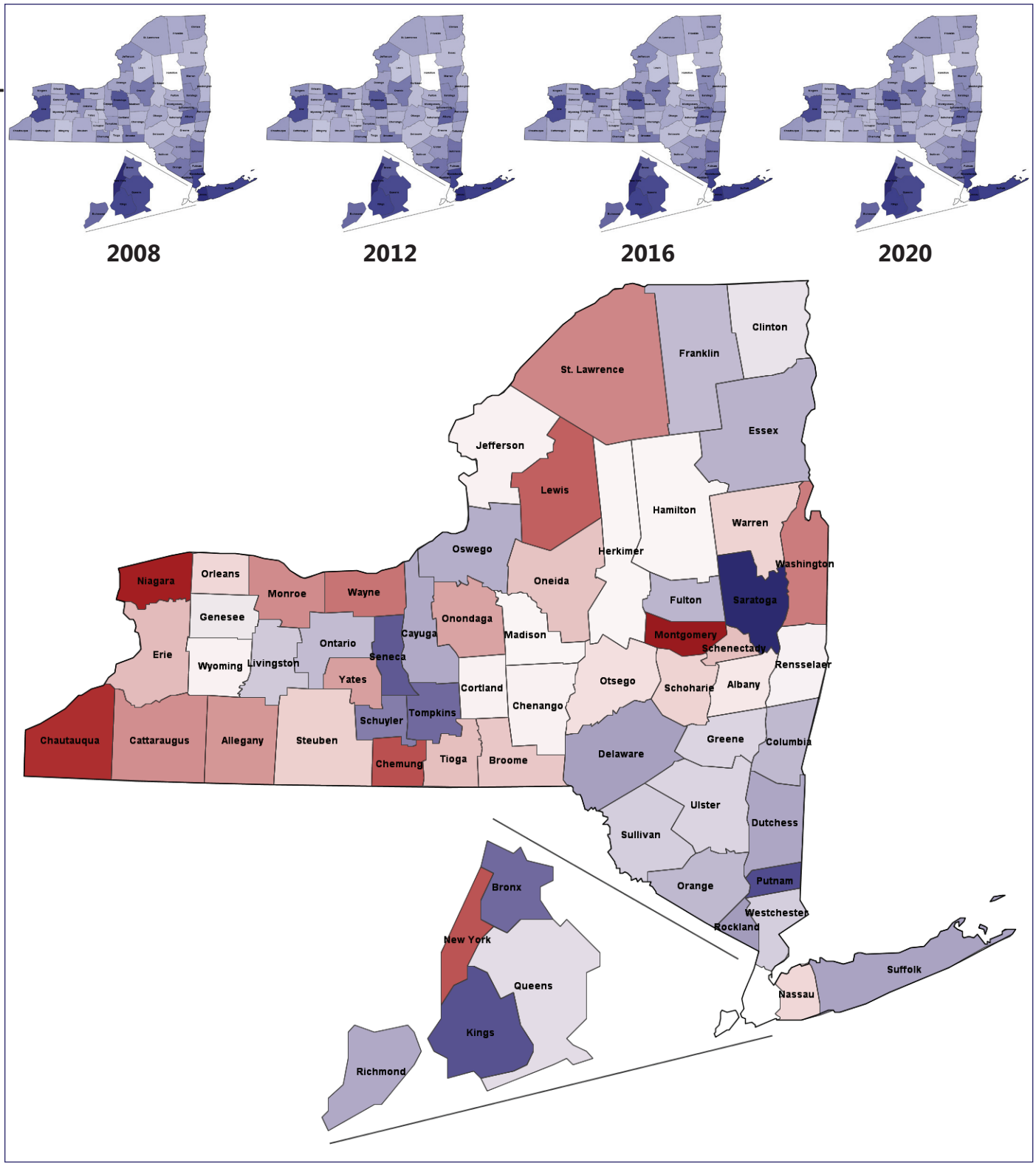
Map 28: Change in Share of State of New York Personal Income Impact Contribution by County, 2008 - 2020. Percentage change in the relative contribution to total New York personal income impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in Putnam County (+7.60%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in Montgomery County (-8.87%). The four figures at the top display State of New York personal income impact contribution by county for 2008, 2012, 2016, and 2020, as indicated.

Map 29



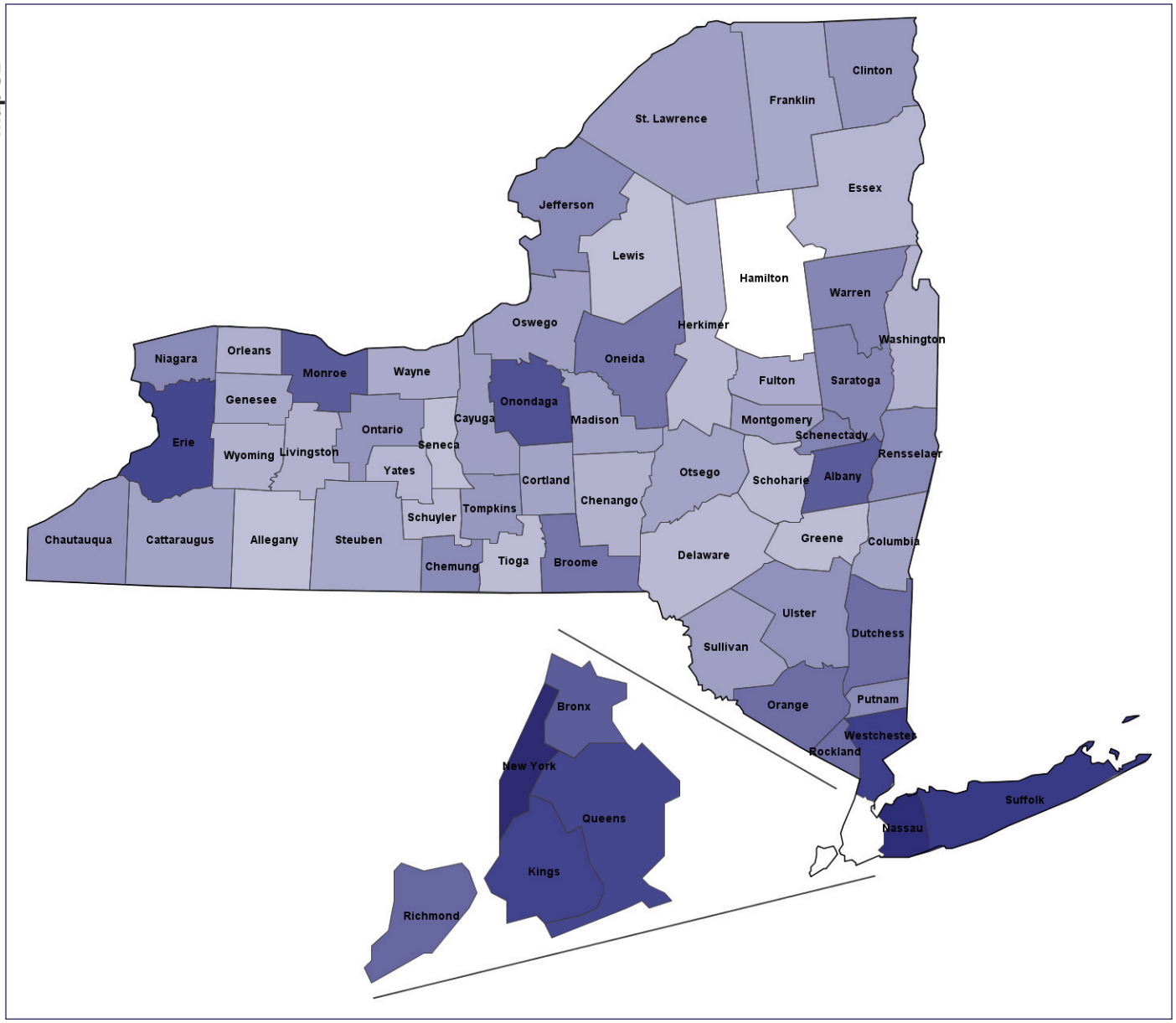
Map 29: State of New York Corporate Sales Impact Contributions by County, 2008. Relative New York corporate sales contributions for each county in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 30



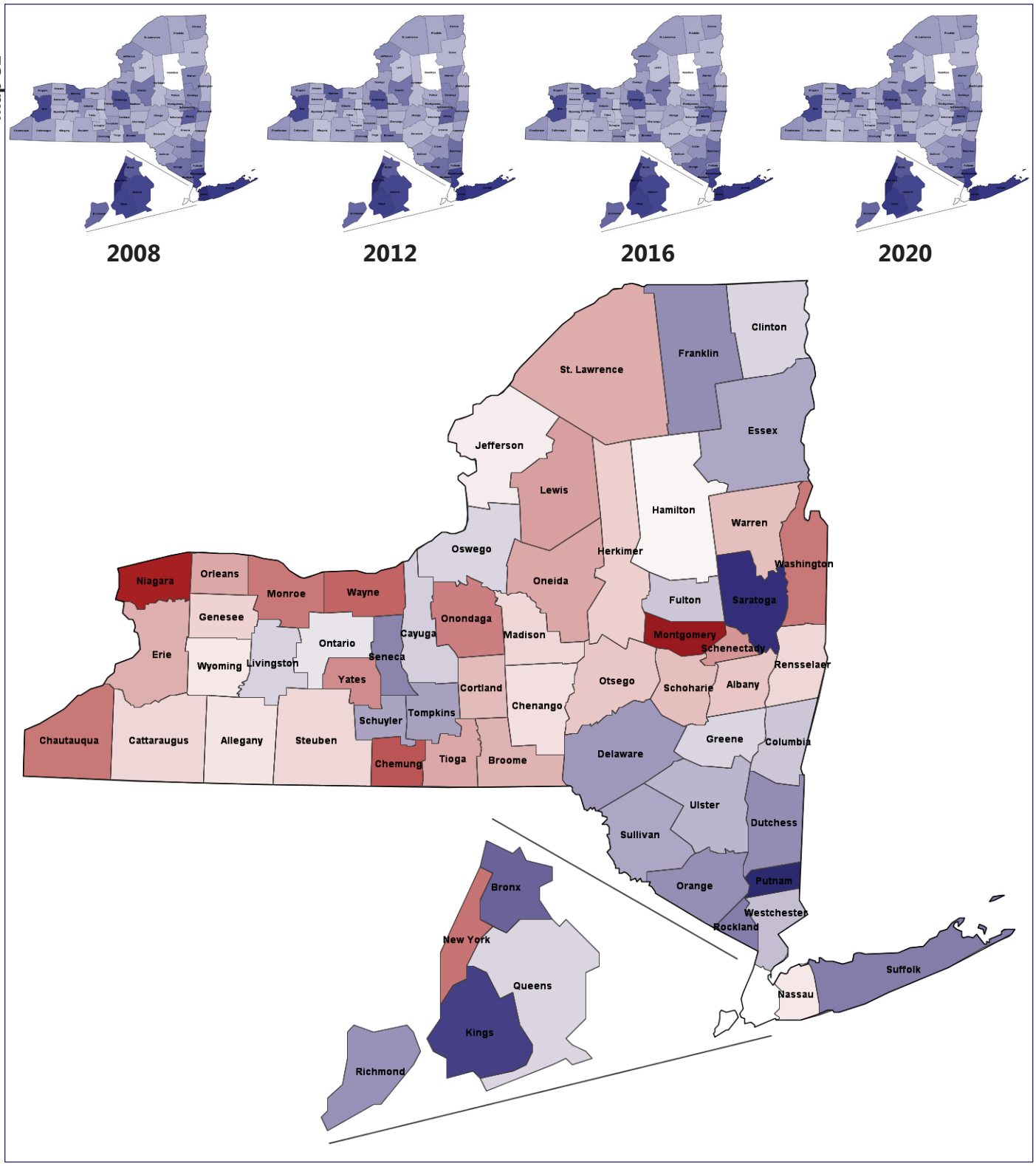
Map 30: Change in Share of State of New York Corporate Sales Impact Contribution by County, 2008 - 2020. Percentage change in the relative contribution to total New York corporate sales impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in Saratoga County (+8.12%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in Montgomery County (-7.32%). The four figures at the top display State of New York corporate sales impact contribution by county for 2008, 2012, 2016, and 2020, as indicated.

Map 31



Map 31: State of New York Tax Revenue Impact Contributions by County, 2008. Relative New York tax revenue contributions for each county in the State of New York. Darker blue indicates relatively larger contribution to total State of New York impact.

Map 32



Map 32: Change in Share of State of New York Tax Revenue Impact Contribution by County, 2008 - 2020. Percentage change in the relative contribution to total New York tax revenue impact between 2008 and 2020 for each county in the State of New York. Darker blue indicates larger increases in relative percentage contribution, with the largest increase occurring in Putnam County (+7.57%). Darker red indicates larger decreases in relative percentage contribution, with the largest decrease occurring in Montgomery County (-8.89%). The four figures at the top display State of New York tax revenue impact contribution by county for 2008, 2012, 2016, and 2020, as indicated.

Table 13

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Albany County								
Total Employment	6,441	5,538	7,305	6,289	8,213	7,083	9,077	7,843
Total Personal Income	497,283	270,376	611,399	326,729	739,248	391,068	873,433	458,405
Total Corporate Sales	787,350	674,165	908,749	823,341	1,045,586	981,711	1,189,395	1,148,891
NY State Tax Revenue	54,659	96,305	67,191	117,374	81,235	141,194	95,976	166,161
NY Local Tax Revenue	56,909	100,268	69,956	122,204	84,578	147,005	99,926	172,999
Allegany County								
Total Employment	104	27	118	31	133	35	147	38
Total Personal Income	4,718	1,333	5,821	1,614	7,055	1,935	8,351	2,271
Total Corporate Sales	7,087	3,374	8,114	4,156	9,281	4,970	10,507	5,830
NY State Tax Revenue	784	400	968	488	1,173	588	1,388	692
NY Local Tax Revenue	817	417	1,008	508	1,221	612	1,445	720
Bronx County								
Total Employment	4,992	5,234	5,801	6,099	6,667	7,038	7,517	7,965
Total Personal Income	477,978	353,851	604,020	437,584	748,286	535,514	903,530	640,455
Total Corporate Sales	712,209	835,147	833,503	1,030,882	971,868	1,255,512	1,119,612	1,498,005
NY State Tax Revenue	48,677	103,922	61,446	129,746	76,073	159,658	91,809	191,774
NY Local Tax Revenue	50,681	108,199	63,975	135,085	79,204	166,228	95,587	199,666
Broome County								
Total Employment	3,048	2,084	3,458	2,364	3,877	2,652	4,274	2,927
Total Personal Income	230,705	93,866	283,236	113,282	341,272	135,067	401,974	157,777
Total Corporate Sales	387,422	223,159	458,832	266,600	526,652	317,204	597,737	370,450
NY State Tax Revenue	38,138	24,072	46,818	29,195	56,408	34,918	66,438	40,890
NY Local Tax Revenue	39,708	25,063	48,745	30,397	58,730	36,355	69,172	42,573
Cattaraugus County								
Total Employment	532	235	602	267	676	301	746	334
Total Personal Income	32,443	11,142	39,962	13,475	48,363	16,156	57,182	18,963
Total Corporate Sales	48,857	27,366	55,841	33,322	63,747	39,836	72,042	46,715
NY State Tax Revenue	4,898	3,488	6,033	4,250	7,301	5,115	8,633	6,021
NY Local Tax Revenue	5,100	3,632	6,282	4,424	7,602	5,325	8,988	6,269
Cayuga County								
Total Employment	376	534	431	614	489	698	545	780
Total Personal Income	30,057	24,458	37,445	29,945	45,794	36,239	54,654	42,903
Total Corporate Sales	44,660	60,144	51,518	74,251	59,270	89,490	67,461	105,746
NY State Tax Revenue	4,898	5,961	6,102	7,327	7,461	8,889	8,904	10,543
NY Local Tax Revenue	5,100	6,207	6,353	7,629	7,768	9,254	9,271	10,977
Chautauqua County								
Total Employment	956	515	1,070	578	1,188	644	1,299	707
Total Personal Income	63,880	25,006	77,703	29,834	92,996	35,335	108,855	41,029
Total Corporate Sales	98,141	60,413	111,636	72,105	126,157	85,145	141,267	98,764
NY State Tax Revenue	11,490	5,810	13,976	6,957	16,726	8,256	19,577	9,602
NY Local Tax Revenue	11,963	6,049	14,551	7,243	17,414	8,596	20,383	9,997
Chemung County								
Total Employment	1,172	1,111	1,307	1,247	1,446	1,383	1,574	1,511
Total Personal Income	97,189	49,942	117,642	59,632	140,139	70,311	163,363	81,326
Total Corporate Sales	148,838	127,700	167,717	156,209	189,091	183,210	211,275	211,298
NY State Tax Revenue	14,472	13,198	17,516	15,824	20,864	18,716	24,320	21,700
NY Local Tax Revenue	15,068	13,742	18,237	16,475	21,723	19,486	25,321	22,594
Chenango County								
Total Employment	238	121	270	139	303	157	335	174
Total Personal Income	12,827	5,577	15,801	6,804	19,121	8,171	22,609	9,605
Total Corporate Sales	20,258	14,095	23,370	17,578	26,831	21,025	30,468	24,670
NY State Tax Revenue	2,051	1,617	2,526	1,980	3,057	2,385	3,615	2,810
NY Local Tax Revenue	2,135	1,684	2,630	2,062	3,183	2,483	3,763	2,926

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Clinton County								
Total Employment	800	481	915	550	1,037	624	1,155	696
Total Personal Income	50,528	24,355	62,857	29,625	76,762	35,700	91,505	42,114
Total Corporate Sales	77,524	59,546	89,697	72,991	103,633	87,768	118,371	103,507
NY State Tax Revenue	9,438	5,281	11,740	6,447	14,337	7,786	17,090	9,201
NY Local Tax Revenue	9,826	5,499	12,223	6,712	14,927	8,107	17,793	9,580
Columbia County								
Total Employment	313	375	359	432	407	492	454	551
Total Personal Income	26,086	19,505	32,511	23,891	39,777	28,940	47,492	34,283
Total Corporate Sales	38,668	46,748	44,600	57,483	51,297	69,344	58,375	81,998
NY State Tax Revenue	3,914	4,946	4,878	6,089	5,968	7,397	7,125	8,784
NY Local Tax Revenue	4,075	5,150	5,079	6,339	6,214	7,702	7,419	9,145
Cortland County								
Total Employment	349	427	395	485	443	545	488	602
Total Personal Income	24,184	19,057	29,738	23,066	35,944	27,560	42,450	32,259
Total Corporate Sales	36,472	47,755	41,587	58,759	47,389	69,916	53,470	81,679
NY State Tax Revenue	3,650	4,962	4,489	6,031	5,425	7,229	6,407	8,483
NY Local Tax Revenue	3,801	5,166	4,673	6,280	5,648	7,527	6,670	8,832
Delaware County								
Total Employment	180	66	207	77	235	89	263	100
Total Personal Income	7,541	3,164	9,421	3,920	11,548	4,776	13,814	5,685
Total Corporate Sales	11,545	7,992	13,413	10,140	15,542	12,303	17,802	14,619
NY State Tax Revenue	1,019	1,087	1,273	1,353	1,560	1,653	1,866	1,972
NY Local Tax Revenue	1,060	1,132	1,325	1,408	1,624	1,721	1,943	2,053
Dutchess County								
Total Employment	2,859	2,667	3,300	3,089	3,771	3,544	4,228	3,990
Total Personal Income	269,854	159,158	338,819	195,853	417,360	238,451	501,355	283,824
Total Corporate Sales	400,237	380,648	465,447	468,368	538,941	567,948	617,026	674,860
NY State Tax Revenue	41,386	41,131	51,956	50,948	63,996	62,271	76,870	74,350
NY Local Tax Revenue	43,089	42,824	54,095	53,045	66,629	64,834	80,034	77,410
Erie County								
Total Employment	13,110	9,945	14,803	11,255	16,592	12,634	18,291	13,949
Total Personal Income	939,131	457,802	1,149,962	551,826	1,386,462	658,770	1,633,993	770,498
Total Corporate Sales	1,517,683	1,136,828	1,741,443	1,385,869	2,000,450	1,647,082	2,272,142	1,922,175
NY State Tax Revenue	172,966	107,611	211,751	130,136	255,255	155,691	300,786	182,405
NY Local Tax Revenue	180,084	112,040	220,465	135,492	265,760	162,099	313,165	189,912
Essex County								
Total Employment	152	100	175	116	199	132	222	149
Total Personal Income	8,243	4,956	10,311	6,089	12,654	7,399	15,150	8,791
Total Corporate Sales	12,289	11,881	14,242	14,631	16,457	17,714	18,805	21,015
NY State Tax Revenue	1,248	1,347	1,560	1,664	1,915	2,029	2,293	2,417
NY Local Tax Revenue	1,299	1,402	1,625	1,733	1,994	2,113	2,387	2,517
Franklin County								
Total Employment	484	194	559	224	638	257	715	288
Total Personal Income	26,336	9,372	33,052	11,508	40,655	13,992	48,777	16,634
Total Corporate Sales	40,136	22,949	46,868	28,207	54,609	34,260	62,846	40,755
NY State Tax Revenue	4,295	2,792	5,391	3,456	6,630	4,220	7,955	5,035
NY Local Tax Revenue	4,472	2,907	5,612	3,598	6,903	4,394	8,282	5,242
Fulton County								
Total Employment	277	218	317	251	360	286	401	320
Total Personal Income	15,245	10,626	18,996	13,016	23,236	15,769	27,737	18,684
Total Corporate Sales	22,878	25,755	26,435	31,709	30,467	38,282	34,730	45,298
NY State Tax Revenue	2,520	2,610	3,139	3,210	3,840	3,899	4,584	4,629
NY Local Tax Revenue	2,623	2,717	3,269	3,343	3,998	4,060	4,772	4,819

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Genesee County								
Total Employment	297	336	337	382	379	431	420	478
Total Personal Income	15,728	15,324	19,437	18,574	23,599	22,284	27,983	26,183
Total Corporate Sales	23,274	37,361	26,598	45,535	30,348	54,377	34,288	63,740
NY State Tax Revenue	2,285	3,932	2,823	4,789	3,427	5,762	4,063	6,786
NY Local Tax Revenue	2,379	4,094	2,939	4,986	3,568	5,999	4,230	7,065
Greene County								
Total Employment	94	75	107	87	121	99	135	110
Total Personal Income	5,822	3,940	7,239	4,817	8,839	5,825	10,533	6,891
Total Corporate Sales	8,622	9,439	9,920	11,573	11,384	13,939	12,929	16,459
NY State Tax Revenue	835	1,072	1,038	1,318	1,267	1,600	1,510	1,897
NY Local Tax Revenue	869	1,116	1,081	1,372	1,320	1,665	1,572	1,975
Herkimer County								
Total Employment	104	101	118	115	133	130	147	144
Total Personal Income	5,258	4,634	6,487	5,618	7,864	6,738	9,312	7,913
Total Corporate Sales	7,793	11,238	8,893	13,698	10,134	16,361	11,435	19,178
NY State Tax Revenue	816	1,146	1,006	1,395	1,220	1,678	1,444	1,974
NY Local Tax Revenue	849	1,193	1,048	1,452	1,270	1,747	1,504	2,056
Jefferson County								
Total Employment	1,054	1,242	1,199	1,416	1,351	1,601	1,497	1,778
Total Personal Income	83,007	55,700	102,721	67,651	124,832	81,310	148,150	95,677
Total Corporate Sales	124,311	133,854	142,610	162,738	163,335	194,888	185,146	228,978
NY State Tax Revenue	15,606	12,331	19,312	15,016	23,468	18,077	27,850	21,299
NY Local Tax Revenue	16,248	12,839	20,106	15,634	24,433	18,821	28,996	22,175
Kings County								
Total Employment	13,770	9,461	16,071	11,067	18,549	12,811	20,991	14,540
Total Personal Income	1,079,293	654,638	1,368,430	812,603	1,700,764	997,751	2,059,705	1,196,698
Total Corporate Sales	1,643,167	1,557,663	1,934,439	1,934,029	2,268,961	2,366,406	2,627,448	2,834,790
NY State Tax Revenue	128,561	189,823	162,709	237,968	202,008	293,885	244,433	354,124
NY Local Tax Revenue	133,852	197,635	169,405	247,762	210,322	305,980	254,493	368,698
Lewis County								
Total Employment	63	36	70	41	79	46	86	50
Total Personal Income	4,188	1,700	5,117	2,051	6,147	2,446	7,219	2,859
Total Corporate Sales	6,347	4,056	7,197	4,897	8,168	5,825	9,182	6,800
NY State Tax Revenue	748	436	914	528	1,098	631	1,290	738
NY Local Tax Revenue	779	454	952	550	1,143	657	1,343	769
Livingston County								
Total Employment	223	155	255	178	289	203	322	227
Total Personal Income	12,067	7,277	15,011	8,893	18,328	10,761	21,843	12,736
Total Corporate Sales	18,236	17,870	21,061	21,993	24,276	26,489	27,675	31,281
NY State Tax Revenue	1,620	2,232	2,015	2,747	2,460	3,335	2,931	3,958
NY Local Tax Revenue	1,687	2,324	2,098	2,860	2,561	3,472	3,052	4,121
Madison County								
Total Employment	328	392	373	446	419	504	463	559
Total Personal Income	24,477	18,194	30,201	22,067	36,613	26,494	43,355	31,139
Total Corporate Sales	36,589	44,728	41,844	54,662	47,779	65,396	54,011	76,751
NY State Tax Revenue	3,232	5,282	3,987	6,446	4,832	7,767	5,721	9,154
NY Local Tax Revenue	3,365	5,499	4,151	6,711	5,031	8,086	5,957	9,530
Monroe County								
Total Employment	6,906	6,823	7,744	7,664	8,626	8,541	9,455	9,371
Total Personal Income	491,415	299,403	597,433	358,584	715,800	425,139	838,849	494,130
Total Corporate Sales	803,013	723,279	919,816	869,060	1,049,034	1,027,422	1,183,839	1,193,125
NY State Tax Revenue	85,324	73,435	103,722	88,254	124,259	104,892	145,605	122,154
NY Local Tax Revenue	88,835	76,457	107,991	91,886	129,373	109,209	151,598	127,181

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Montgomery County								
Total Employment	361	541	397	597	435	656	470	711
Total Personal Income	27,615	25,411	33,097	29,908	39,090	34,934	45,212	40,059
Total Corporate Sales	40,937	61,435	45,387	72,828	50,397	84,688	55,561	96,901
NY State Tax Revenue	3,787	6,678	4,537	7,900	5,358	9,258	6,197	10,643
NY Local Tax Revenue	3,942	6,952	4,724	8,226	5,579	9,639	6,452	11,081
Nassau County								
Total Employment	24,331	14,892	27,665	17,001	31,184	19,270	34,550	21,456
Total Personal Income	2,079,136	950,089	2,565,430	1,151,628	3,112,830	1,384,746	3,689,534	1,629,487
Total Corporate Sales	3,283,987	2,282,691	3,790,160	2,767,163	4,365,689	3,316,612	4,971,922	3,898,702
NY State Tax Revenue	284,341	299,855	350,558	366,647	425,179	442,847	503,781	522,992
NY Local Tax Revenue	296,043	312,196	364,985	381,736	442,678	461,072	524,515	544,516
New York County								
Total Employment	31,799	16,199	35,680	18,199	39,732	20,337	43,548	22,361
Total Personal Income	3,403,883	791,498	4,116,939	951,277	4,913,584	1,133,491	5,740,422	1,323,025
Total Corporate Sales	5,860,137	1,902,255	6,734,281	2,283,571	7,720,312	2,698,822	8,749,400	3,133,291
NY State Tax Revenue	251,097	455,958	303,670	550,261	362,426	656,306	423,409	766,427
NY Local Tax Revenue	261,431	474,724	316,168	572,908	377,342	683,316	440,835	797,970
Niagara County								
Total Employment	1,230	1,354	1,361	1,501	1,498	1,654	1,624	1,797
Total Personal Income	73,023	61,481	87,923	72,639	104,303	85,176	121,123	98,031
Total Corporate Sales	110,071	148,406	122,710	176,047	137,180	205,525	152,143	236,038
NY State Tax Revenue	11,542	15,371	13,887	18,246	16,465	21,459	19,114	24,755
NY Local Tax Revenue	12,017	16,003	14,458	18,997	17,143	22,342	19,900	25,774
Oneida County								
Total Employment	2,425	3,231	2,735	3,653	3,062	4,098	3,370	4,522
Total Personal Income	187,309	149,430	229,705	179,924	277,059	214,588	326,577	250,745
Total Corporate Sales	284,999	363,329	325,353	439,342	370,411	522,184	417,567	609,348
NY State Tax Revenue	31,675	35,212	38,838	42,558	46,839	50,878	55,205	59,562
NY Local Tax Revenue	32,978	36,662	40,437	44,310	48,767	52,972	57,477	62,014
Onondaga County								
Total Employment	7,505	8,943	8,429	10,062	9,395	11,229	10,304	12,335
Total Personal Income	607,883	393,995	740,520	472,518	888,105	561,017	1,041,677	652,953
Total Corporate Sales	971,507	979,300	1,108,453	1,190,635	1,264,101	1,407,046	1,426,638	1,633,758
NY State Tax Revenue	101,657	98,524	123,829	118,622	148,497	141,204	174,165	164,676
NY Local Tax Revenue	105,840	102,579	128,925	123,504	154,608	147,015	181,333	171,454
Ontario County								
Total Employment	814	827	930	948	1,052	1,077	1,169	1,203
Total Personal Income	54,046	38,406	67,106	46,889	81,797	56,648	97,346	66,959
Total Corporate Sales	84,500	93,176	98,783	113,845	113,904	137,025	129,875	161,702
NY State Tax Revenue	6,865	11,614	8,522	14,271	10,386	17,300	12,359	20,504
NY Local Tax Revenue	7,148	12,092	8,873	14,858	10,814	18,012	12,868	21,348
Orange County								
Total Employment	3,649	2,149	4,206	2,492	4,797	2,857	5,372	3,215
Total Personal Income	293,083	130,987	367,410	161,125	451,890	195,927	542,117	232,946
Total Corporate Sales	436,674	322,532	507,093	400,911	586,952	485,385	671,748	575,967
NY State Tax Revenue	45,138	35,475	56,581	43,939	69,588	53,652	83,479	64,001
NY Local Tax Revenue	46,996	36,935	58,909	45,747	72,451	55,860	86,914	66,635
Orleans County								
Total Employment	142	230	160	260	180	292	198	322
Total Personal Income	10,341	10,492	12,706	12,638	15,347	15,079	18,112	17,629
Total Corporate Sales	15,260	25,661	17,334	31,097	19,666	36,933	22,106	43,080
NY State Tax Revenue	1,444	2,704	1,774	3,274	2,142	3,918	2,528	4,592
NY Local Tax Revenue	1,503	2,816	1,847	3,408	2,230	4,079	2,632	4,780

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Oswego County								
Total Employment	448	528	513	605	582	688	648	768
Total Personal Income	27,202	24,129	33,877	29,496	41,422	35,655	49,430	42,174
Total Corporate Sales	40,525	58,688	46,701	72,195	53,715	86,907	61,127	102,596
NY State Tax Revenue	4,582	5,651	5,704	6,933	6,972	8,401	8,318	9,955
NY Local Tax Revenue	4,770	5,884	5,938	7,219	7,259	8,747	8,660	10,365
Otsego County								
Total Employment	489	285	554	325	621	365	685	404
Total Personal Income	29,004	13,148	35,682	15,928	43,116	19,033	50,908	22,278
Total Corporate Sales	44,803	34,131	51,365	42,493	58,877	50,625	66,758	59,198
NY State Tax Revenue	4,730	3,652	5,818	4,447	7,030	5,335	8,300	6,263
NY Local Tax Revenue	4,924	3,802	6,058	4,630	7,319	5,554	8,641	6,521
Putnam County								
Total Employment	1,009	870	1,180	1,022	1,365	1,187	1,548	1,351
Total Personal Income	103,319	53,711	131,406	66,969	163,763	82,560	198,809	99,371
Total Corporate Sales	154,861	128,673	182,812	160,364	214,402	196,993	248,300	236,792
NY State Tax Revenue	11,751	17,207	14,944	21,650	18,622	26,824	22,605	32,415
NY Local Tax Revenue	12,235	17,915	15,559	22,541	19,388	27,928	23,536	33,750
Queens County								
Total Employment	10,720	8,588	12,259	9,874	13,893	11,253	15,466	12,592
Total Personal Income	866,310	580,897	1,077,078	708,889	1,315,330	856,829	1,567,901	1,013,153
Total Corporate Sales	1,315,800	1,363,420	1,518,702	1,660,103	1,749,692	1,996,227	1,993,766	2,354,256
NY State Tax Revenue	99,039	169,591	122,909	208,799	149,944	253,643	178,593	301,107
NY Local Tax Revenue	103,115	176,571	127,967	217,392	156,115	264,081	185,943	313,499
Rensselaer County								
Total Employment	939	1,274	1,067	1,450	1,202	1,637	1,330	1,816
Total Personal Income	77,977	63,568	96,335	77,052	116,932	92,423	138,614	108,552
Total Corporate Sales	116,474	152,878	133,344	186,569	152,389	222,864	172,403	261,273
NY State Tax Revenue	9,189	18,504	11,340	22,594	13,755	27,228	16,296	32,097
NY Local Tax Revenue	9,567	19,265	11,807	23,524	14,321	28,348	16,967	33,418
Richmond County								
Total Employment	4,314	3,410	4,979	3,951	5,688	4,534	6,377	5,106
Total Personal Income	359,572	223,986	451,455	275,370	556,025	335,082	667,855	398,670
Total Corporate Sales	535,121	529,549	622,062	649,816	720,572	787,059	825,250	934,370
NY State Tax Revenue	49,159	52,944	61,699	65,484	75,975	79,970	91,240	95,419
NY Local Tax Revenue	51,182	55,123	64,238	68,179	79,102	83,262	94,996	99,345
Rockland County								
Total Employment	3,190	2,685	3,689	3,117	4,223	3,581	4,744	4,039
Total Personal Income	303,023	171,814	381,159	211,603	470,298	257,905	565,819	307,304
Total Corporate Sales	454,780	410,389	530,160	506,106	615,832	614,177	707,032	730,392
NY State Tax Revenue	41,637	43,454	52,362	53,885	64,600	65,944	77,712	78,830
NY Local Tax Revenue	43,351	45,243	54,517	56,103	67,258	68,658	80,910	82,075
St. Lawrence County								
Total Employment	503	420	568	474	635	531	698	586
Total Personal Income	35,573	19,377	43,612	23,353	52,556	27,829	61,899	32,496
Total Corporate Sales	53,377	46,247	60,705	55,625	69,000	66,112	77,674	77,139
NY State Tax Revenue	6,731	4,226	8,252	5,105	9,944	6,093	11,711	7,123
NY Local Tax Revenue	7,008	4,400	8,592	5,315	10,353	6,344	12,193	7,417
Saratoga County								
Total Employment	1,531	1,442	1,788	1,691	2,064	1,959	2,337	2,225
Total Personal Income	103,912	72,258	131,882	90,219	164,058	111,140	198,847	133,687
Total Corporate Sales	157,300	176,238	185,330	222,343	217,590	272,699	252,198	327,344
NY State Tax Revenue	16,565	18,348	21,012	23,024	26,131	28,448	31,666	34,300
NY Local Tax Revenue	17,247	19,103	21,876	23,972	27,206	29,619	32,969	35,711

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Schenectady County								
Total Employment	1,138	1,728	1,283	1,950	1,434	2,182	1,578	2,402
Total Personal Income	98,509	82,321	120,596	98,976	145,237	117,779	170,965	137,354
Total Corporate Sales	150,690	199,100	171,867	241,415	195,538	286,055	220,288	332,942
NY State Tax Revenue	11,255	24,479	13,766	29,640	16,567	35,437	19,492	41,480
NY Local Tax Revenue	11,718	25,487	14,332	30,860	17,249	36,896	20,295	43,187
Schoharie County								
Total Employment	118	74	133	85	149	95	164	105
Total Personal Income	5,198	3,529	6,392	4,273	7,724	5,114	9,121	5,992
Total Corporate Sales	7,720	8,692	8,790	10,675	9,994	12,716	11,256	14,868
NY State Tax Revenue	813	911	1,000	1,108	1,209	1,330	1,427	1,562
NY Local Tax Revenue	847	949	1,041	1,154	1,258	1,385	1,486	1,626
Schuyler County								
Total Employment	71	117	82	135	94	154	105	173
Total Personal Income	6,054	5,245	7,588	6,458	9,330	7,849	11,190	9,330
Total Corporate Sales	8,929	12,892	10,348	16,037	11,953	19,397	13,656	23,000
NY State Tax Revenue	843	1,365	1,056	1,688	1,299	2,058	1,558	2,452
NY Local Tax Revenue	878	1,421	1,100	1,758	1,353	2,143	1,622	2,553
Seneca County								
Total Employment	58	69	67	80	77	91	86	103
Total Personal Income	3,348	3,094	4,212	3,827	5,196	4,671	6,251	5,573
Total Corporate Sales	4,966	7,577	5,779	9,449	6,701	11,481	7,683	13,667
NY State Tax Revenue	452	834	568	1,037	701	1,269	843	1,518
NY Local Tax Revenue	470	868	592	1,079	730	1,322	878	1,581
Steuben County								
Total Employment	395	234	448	267	503	301	556	334
Total Personal Income	23,776	10,730	29,271	13,033	35,428	15,630	41,893	18,352
Total Corporate Sales	35,913	27,183	41,138	33,662	46,976	40,203	53,102	47,115
NY State Tax Revenue	3,724	3,013	4,585	3,676	5,550	4,423	6,562	5,206
NY Local Tax Revenue	3,878	3,137	4,774	3,828	5,778	4,605	6,832	5,420
Suffolk County								
Total Employment	14,958	10,585	17,281	12,289	19,765	14,138	22,186	15,954
Total Personal Income	1,266,909	679,517	1,591,796	837,763	1,962,412	1,022,570	2,359,208	1,219,688
Total Corporate Sales	1,917,576	1,599,625	2,240,354	1,960,653	2,604,069	2,383,071	2,991,186	2,837,200
NY State Tax Revenue	229,495	149,942	288,200	185,745	355,214	227,308	426,955	271,688
NY Local Tax Revenue	238,940	156,113	300,061	193,390	369,833	236,663	444,526	282,870
Sullivan County								
Total Employment	716	185	823	214	936	244	1,044	273
Total Personal Income	41,699	10,790	52,058	13,221	63,771	15,997	76,231	18,935
Total Corporate Sales	64,904	28,335	75,599	35,777	87,864	43,221	100,877	51,176
NY State Tax Revenue	7,001	3,103	8,740	3,830	10,706	4,657	12,798	5,534
NY Local Tax Revenue	7,289	3,231	9,100	3,988	11,147	4,848	13,325	5,761
Tioga County								
Total Employment	86	104	97	118	108	132	119	146
Total Personal Income	5,946	4,220	7,284	5,119	8,775	6,095	10,331	7,113
Total Corporate Sales	8,875	10,389	10,061	12,817	11,401	15,175	12,801	17,651
NY State Tax Revenue	759	1,142	930	1,389	1,120	1,661	1,318	1,944
NY Local Tax Revenue	790	1,189	968	1,447	1,166	1,729	1,372	2,024
Tompkins County								
Total Employment	572	760	660	878	754	1,003	846	1,126
Total Personal Income	40,799	34,008	51,208	41,828	63,026	50,816	75,652	60,379
Total Corporate Sales	61,775	84,792	72,293	105,515	83,890	127,825	96,211	151,754
NY State Tax Revenue	6,210	8,743	7,794	10,809	9,592	13,176	11,513	15,697
NY Local Tax Revenue	6,465	9,103	8,115	11,254	9,987	13,718	11,987	16,344

Table 13, continued

County Name	2008		2012		2016		2020	
Concept	County	NY	County	NY	County	NY	County	NY
Ulster County								
Total Employment	997	643	1,144	741	1,300	846	1,450	948
Total Personal Income	66,560	37,074	83,078	45,409	101,782	55,054	121,668	65,272
Total Corporate Sales	98,403	88,930	113,613	109,094	130,792	131,742	148,966	155,934
NY State Tax Revenue	11,180	9,072	13,955	11,170	17,096	13,583	20,436	16,143
NY Local Tax Revenue	11,641	9,445	14,529	11,630	17,799	14,143	21,277	16,808
Warren County								
Total Employment	1,418	1,362	1,603	1,546	1,798	1,741	1,983	1,927
Total Personal Income	99,876	66,216	122,750	80,070	148,372	95,848	175,240	112,343
Total Corporate Sales	151,703	161,014	173,351	195,982	197,820	233,882	223,477	273,861
NY State Tax Revenue	13,008	19,790	15,984	24,086	19,318	28,945	22,814	34,031
NY Local Tax Revenue	13,543	20,605	16,642	25,077	20,113	30,136	23,753	35,432
Washington County								
Total Employment	192	157	216	177	240	197	262	216
Total Personal Income	9,681	7,670	11,797	9,182	14,145	10,889	16,583	12,659
Total Corporate Sales	14,353	18,434	16,182	22,203	18,239	26,211	20,380	30,403
NY State Tax Revenue	1,269	2,072	1,546	2,495	1,854	2,970	2,173	3,462
NY Local Tax Revenue	1,322	2,158	1,610	2,598	1,930	3,092	2,263	3,605
Wayne County								
Total Employment	280	284	313	318	348	354	380	387
Total Personal Income	14,317	12,971	17,405	15,485	20,824	18,324	24,366	21,261
Total Corporate Sales	21,203	31,542	23,842	37,863	26,808	44,594	29,891	51,620
NY State Tax Revenue	2,022	3,406	2,457	4,087	2,939	4,851	3,438	5,643
NY Local Tax Revenue	2,105	3,546	2,558	4,255	3,060	5,051	3,579	5,875
Westchester County								
Total Employment	10,454	11,230	11,995	12,940	13,632	14,777	15,215	16,566
Total Personal Income	1,147,610	721,877	1,431,344	883,241	1,753,018	1,069,985	2,095,019	1,267,809
Total Corporate Sales	1,731,753	1,705,127	2,004,104	2,082,404	2,313,335	2,510,775	2,640,705	2,968,239
NY State Tax Revenue	157,547	178,073	196,307	219,338	240,288	266,757	287,036	317,062
NY Local Tax Revenue	164,031	185,402	204,386	228,365	250,177	277,735	298,849	330,111
Wyoming County								
Total Employment	167	148	189	169	213	191	236	212
Total Personal Income	9,542	6,682	11,797	8,119	14,328	9,760	16,995	11,486
Total Corporate Sales	14,150	16,196	16,187	19,791	18,484	23,677	20,899	27,796
NY State Tax Revenue	1,247	1,984	1,541	2,426	1,872	2,927	2,220	3,454
NY Local Tax Revenue	1,298	2,066	1,605	2,525	1,949	3,047	2,312	3,596
Yates County								
Total Employment	177	131	199	148	222	165	243	182
Total Personal Income	7,796	6,010	9,522	7,219	11,437	8,589	13,431	10,015
Total Corporate Sales	11,677	14,737	13,209	17,848	14,942	21,150	16,749	24,616
NY State Tax Revenue	1,291	1,460	1,576	1,760	1,893	2,098	2,223	2,451
NY Local Tax Revenue	1,344	1,520	1,641	1,832	1,971	2,185	2,315	2,552

Table 13: State of New York Economic Impact Contributions by County, 2008 - 2020. Total Employment, Total Personal Income, Total Corporate Sales, New York State Tax Revenue, and New York Local Tax Revenue during years 2008, 2012, 2016, and 2020 for each county in the State of New York. The share of the impact contributions that occur in each county and the share of the impact contributions that occur in the remainder of New York is indicated. Employment is reported in Full-Time Equivalents (FTE), and all other values are reported in thousands of real 2008 dollars ($1,000s).

Impact per Dollar Private Practice Medical Care

A very useful perspective from which to view the economic impact of Private Practice Physicians in the State of New York is to consider the economic impacts of each dollar spent on Private Practice Medical care. The following per dollar economic impacts of Private Practice Medical care are detailed in this section: total corporate sales across all regions required to provide that dollar's worth of care, total NY state tax revenue generated, and total NY local tax revenue generated.

The average economic value of each dollar spent on Private Practice Medical care in the State of New York in 2008 was $4.45, of which just over $2.16 is comprised of goods and services purchased within the State of New York. In other words, for every one dollar paid for Private Practice Medical care in the State of New York, $2.16 worth of economic activity is generated within the state.

The average NY state tax revenue resulting from each dollar spent on Private Practice Medical care in the State of New York in 2008 was $.22. The average NY local tax revenue resulting from each dollar spent on Private Practice Medical care in the State of New York in 2008 was $.23. In other words, for every one dollar paid for Private Practice Medical care in the State of New York, $.22 of state tax revenue and $.23 of local tax revenue is realized by state and local governments, respectively.

Economic Value per Dollar at the Metropolitan Statistical Area Level

The total economic value of each dollar spent on Private Practice Medical care varies somewhat by Metropolitan Statistical Area (MSA), and ranges from $4.55 in the East Central non-MSA region to $4.36 in the Syracuse MSA. Economic value realized within the State of New York varies to a greater degree by MSA, and ranges from $2.61 in the Ithaca MSA to $1.90 in the Poughkeepsie-Newburgh-Middleton MSA. These differences are caused by variations in the degree to which employees commute from outside the state ("residence adjustment" in economic terms) and in the locations of providers of goods and services necessary to operate local medical practices.

Economic Value per Dollar Private Practice Medical care is listed for each MSA in Table 14 (page 97), and is displayed in Figure 29 (this page). State of New York economic value per dollar for each MSA relative to the average State of New York economic value per dollar across all MSAs is displayed in Map 33 (page 90).

Figure 29

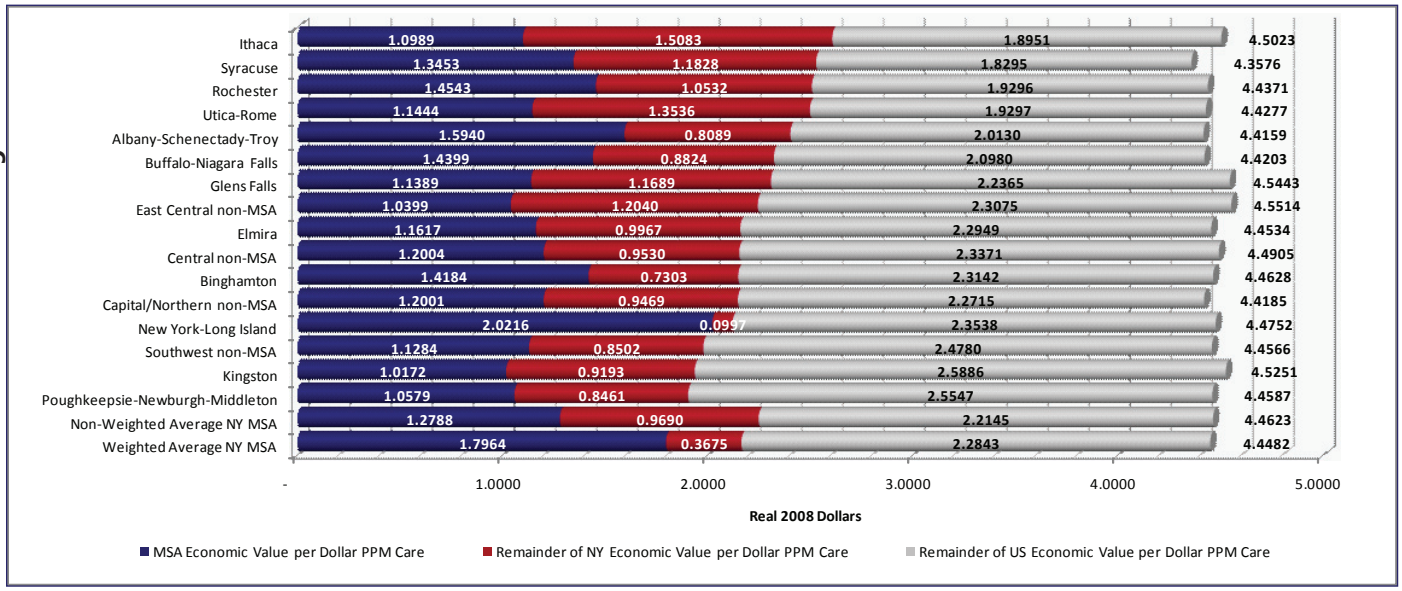


Figure 29: State of New York Economic Value per Dollar Private Practice Medical Care by MSA, 2008. Total economic value per dollar spent on PPM care in each MSA and MSA-equivalent in the State of New York. The blue portion of the bar for each MSA represents economic value within the MSA itself, the red portion represents economic value within the remainder of the State of New York, and the grey portion represents economic value within the remainder of the US.

State and Local Tax Revenue per Dollar at the Metropolitan Statistical Area Level

NY state tax revenue realized per Dollar Private Practice Medical care varies somewhat by MSA, and ranges from $.26 in the Ithaca MSA to $.20 in the Poughkeepsie-Newburgh-Middleton MSA. NY local tax revenue realized varies similarly by MSA, and ranges from $.27 in the Ithaca MSA to $.21 in the Poughkeepsie-Newburgh-Middleton MSA. These variations are caused by the same factors as those for economic value.

NY state tax revenue per dollar Private Practice Medical care for each MSA is listed in Table 14 (page 97), and is displayed in Figure 30 (this page). NY local tax revenue per dollar Private Practice Medical care for each MSA is listed in table 14 (page 97), and is displayed in Figure 31 (page 89). NY tax revenue per dollar for each MSA relative to

Figure 30

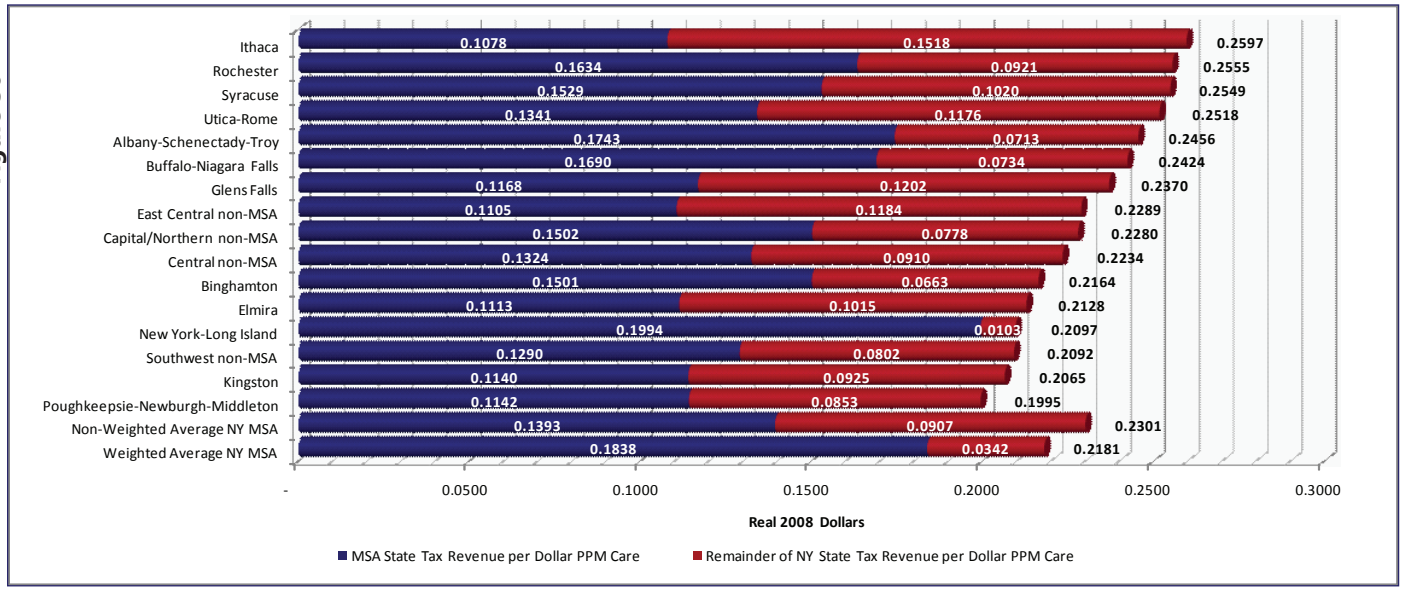


Figure 30: State of New York State Tax Revenue per Dollar Private Practice Medical Care by MSA, 2008. NY state tax revenue collected per dollar spent on PPM care in each MSA and MSA-equivalent in the State of New York. The blue portion of the bar for each MSA represents state tax revenue collected in the MSA itself, the red portion represents state tax revenue collected in the remainder of the State of New York.

Figure 31

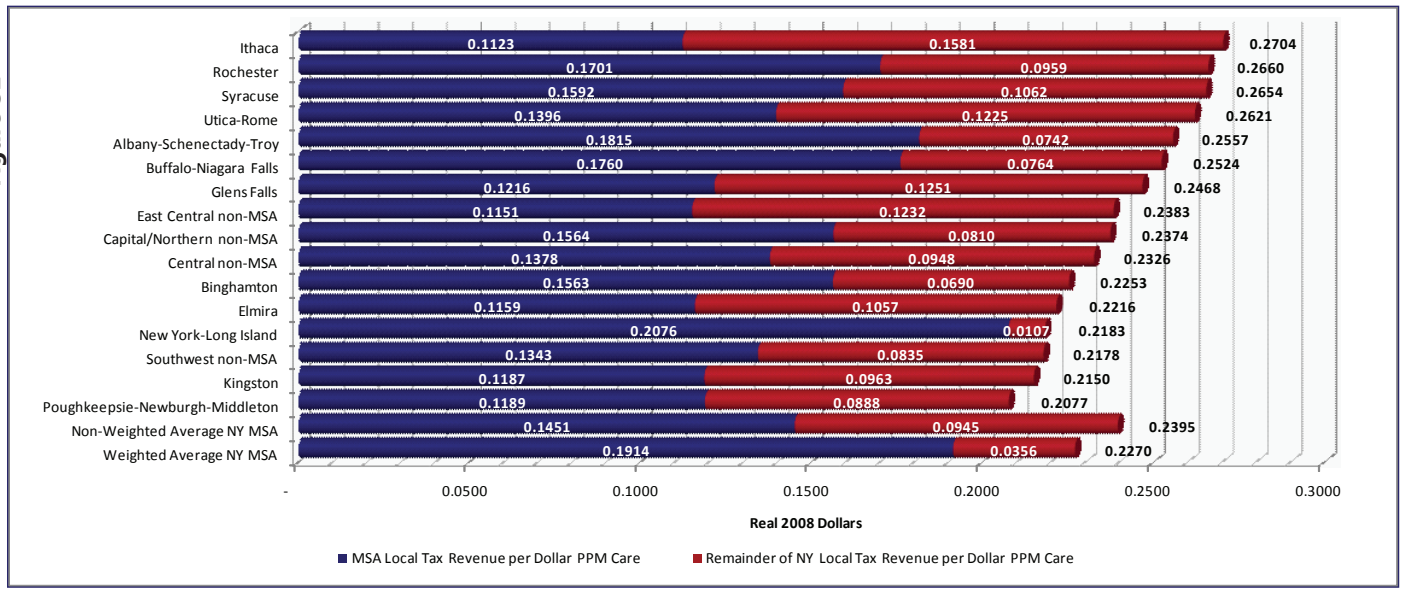


Figure 31: State of New York Local Tax Revenue per Dollar Private Practice Medical Care by MSA, 2008. NY local tax revenue collected per dollar spent on PPM care in each MSA and MSA-equivalent in the State of New York. The blue portion of the bar for each MSA represents NY local tax revenue collected in the MSA itself, the red portion represents local tax revenue collected in the remainder of the State of New York.

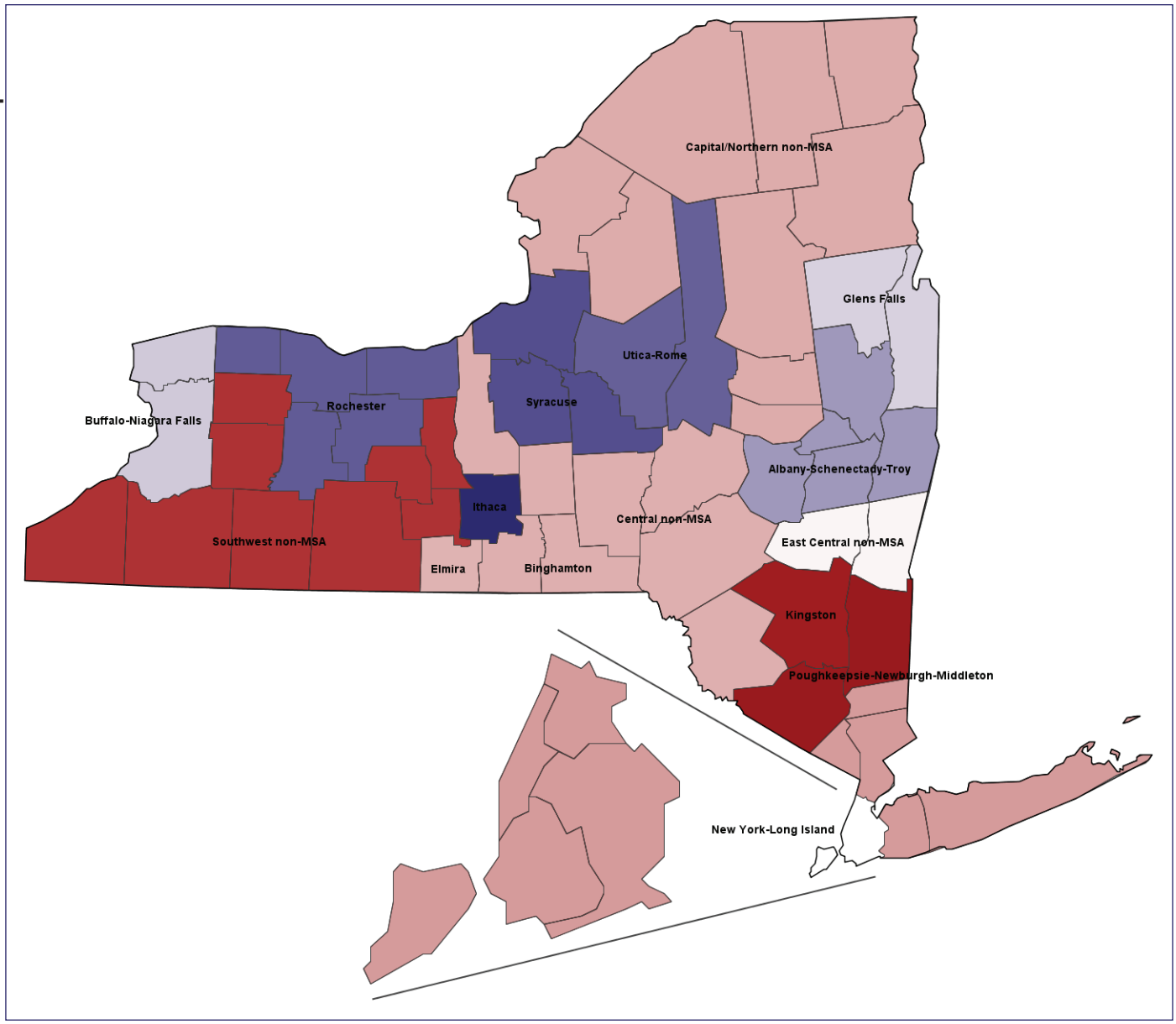
the average NY tax revenue per dollar across all MSAs is displayed in Map 34 (page 91).

Economic Value per Dollar at the County Level

The total economic value of each dollar spent on Private Practice Medical care varies somewhat more by county than by MSA, and ranges from $4.60 in Delaware County to $4.23 in the Oswego County. As observed with MSAs, economic value realized within the State of New York varies to a greater degree by county, and ranges from $2.63 in the Orleans County to $1.63 in Allegany County. Again, these differences are caused by variations in the degree to which employees commute from outside the state ("residence adjustment" in economic terms) and in the locations of providers of goods and services necessary to operate local medical practices.

Economic Value per Dollar Private Practice Medical care is listed for each county in Table 15 (page 97), and is displayed in Figure 32 (page 92). State of New York

Map 33



Map 33: State of New York Economic Value per Dollar Private Practice Medical Care by MSA, 2008. Economic value per dollar spent on PPM care in each MSA and MSA-equivalent in the State of New York relative to the average economic value across all MSAs. Shades of red represent economic values lower than the average, with the darkest red indicating just over $.34 below the average. Shades of blue represent economic values higher than the average, with the darkest blue indicating nearly $.36 above the average.

economic value per dollar for each county relative to the average State of New York economic value per dollar across all counties is displayed in Map 35 (page 95).

State and Local Tax Revenue per Dollar at the County Level

NY state tax revenue realized per Dollar Private Practice Medical care also varies somewhat more by county than by MSA, and ranges from $.27 in Orleans County to $.18 in Allegany County. NY local tax revenue realized varies similarly by county, and ranges from $.28 in Orleans County to $.19 in Allegany County. These variations are caused by the same factors as those for economic value.

NY state tax revenue per dollar Private Practice Medical care for each county is listed in Table 15 (page 97), and is displayed in Figure 33 (page 93). NY local tax revenue per dollar Private Practice Medical care for each county is listed

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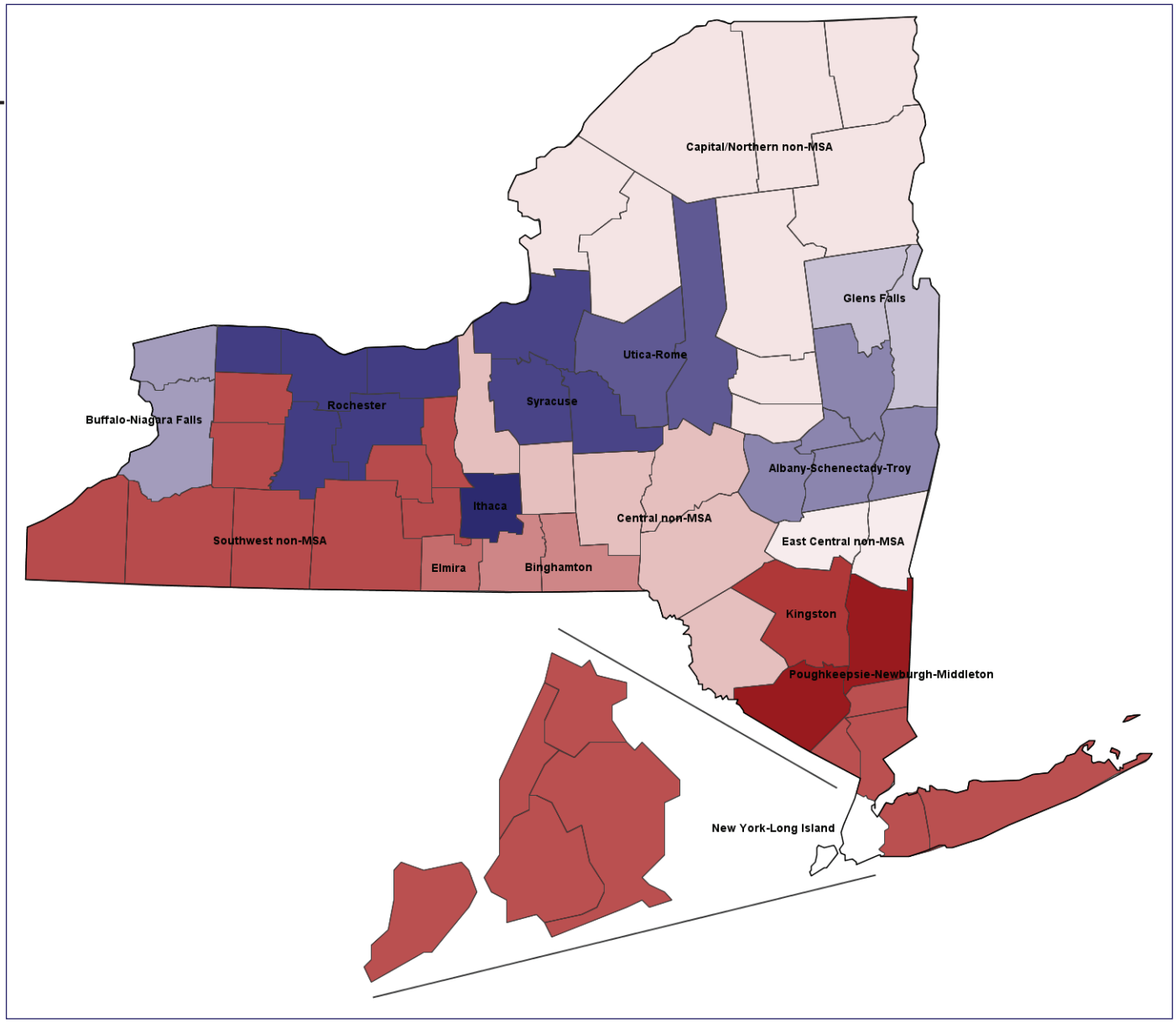
Map 34



Map 34: State of New York Tax Revenue per Dollar Private Practice Medical Care by MSA, 2008. NY state tax revenue and NY local tax revenue per dollar spent on PPM care in each MSA and MSA-equivalent in the State of New York relative to the average NY state tax revenue and NY local tax revenue across all MSAs. Shades of red represent tax revenues lower than the average, with the darkest red indicating just under 3.1¢ below the average NY state tax revenue and 3.2¢ below the average NY local tax revenue. Shades of blue represent tax revenues higher than the average, with the darkest blue indicating nearly 3.0¢ above the average NY state tax revenue and 3.1¢ above the average NY local tax revenue.

Figure 32

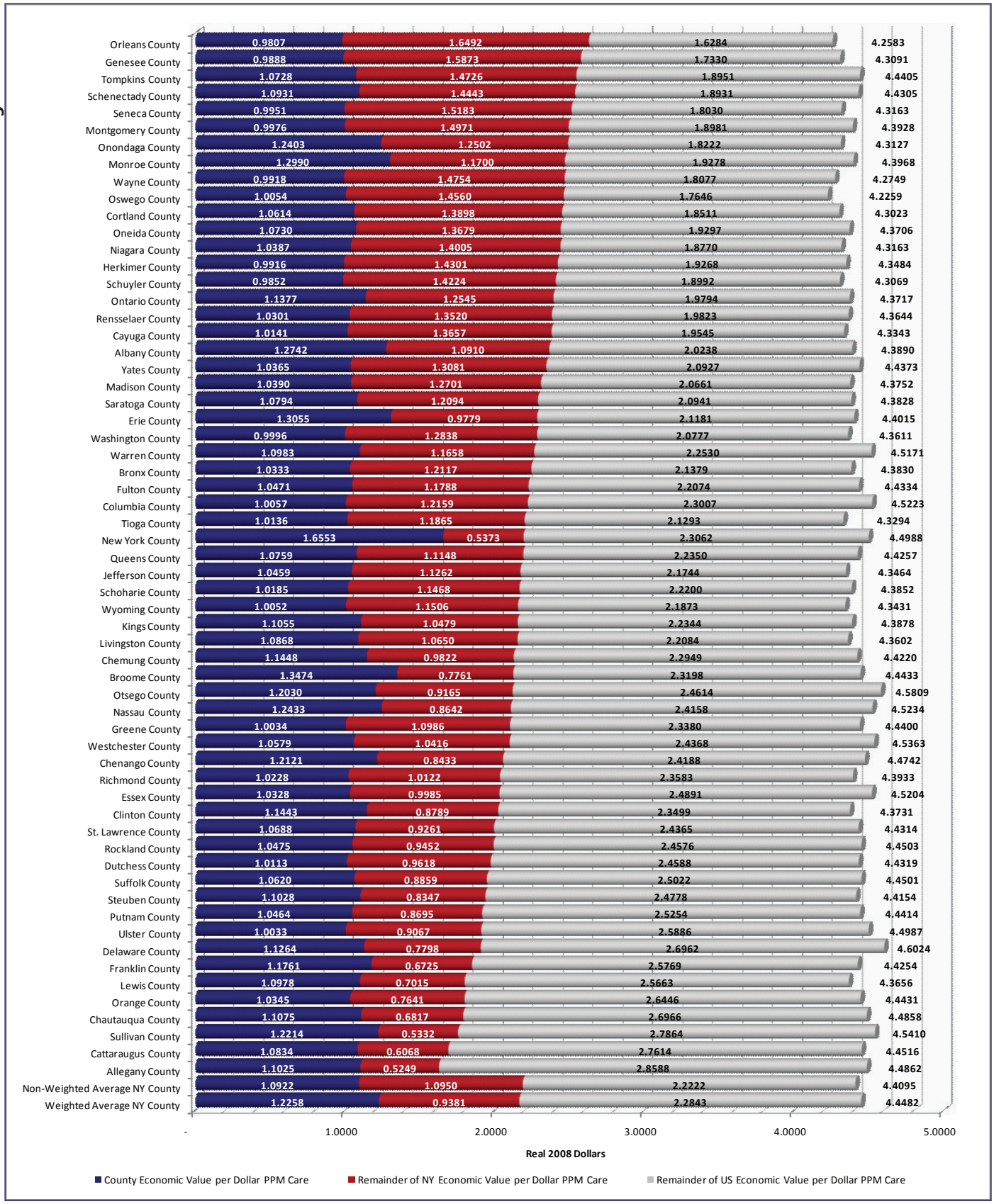


Figure 32: State of New York Economic Value per Dollar Private Practice Medical Care by County, 2008. Total economic value per dollar spent on PPM care in each county of the State of New York. The blue portion of the bar for each county represents economic value within the county itself, the red portion represents economic value within the remainder of the State of New York, and the grey portion represents economic value within the remainder of the US.

Figure 33

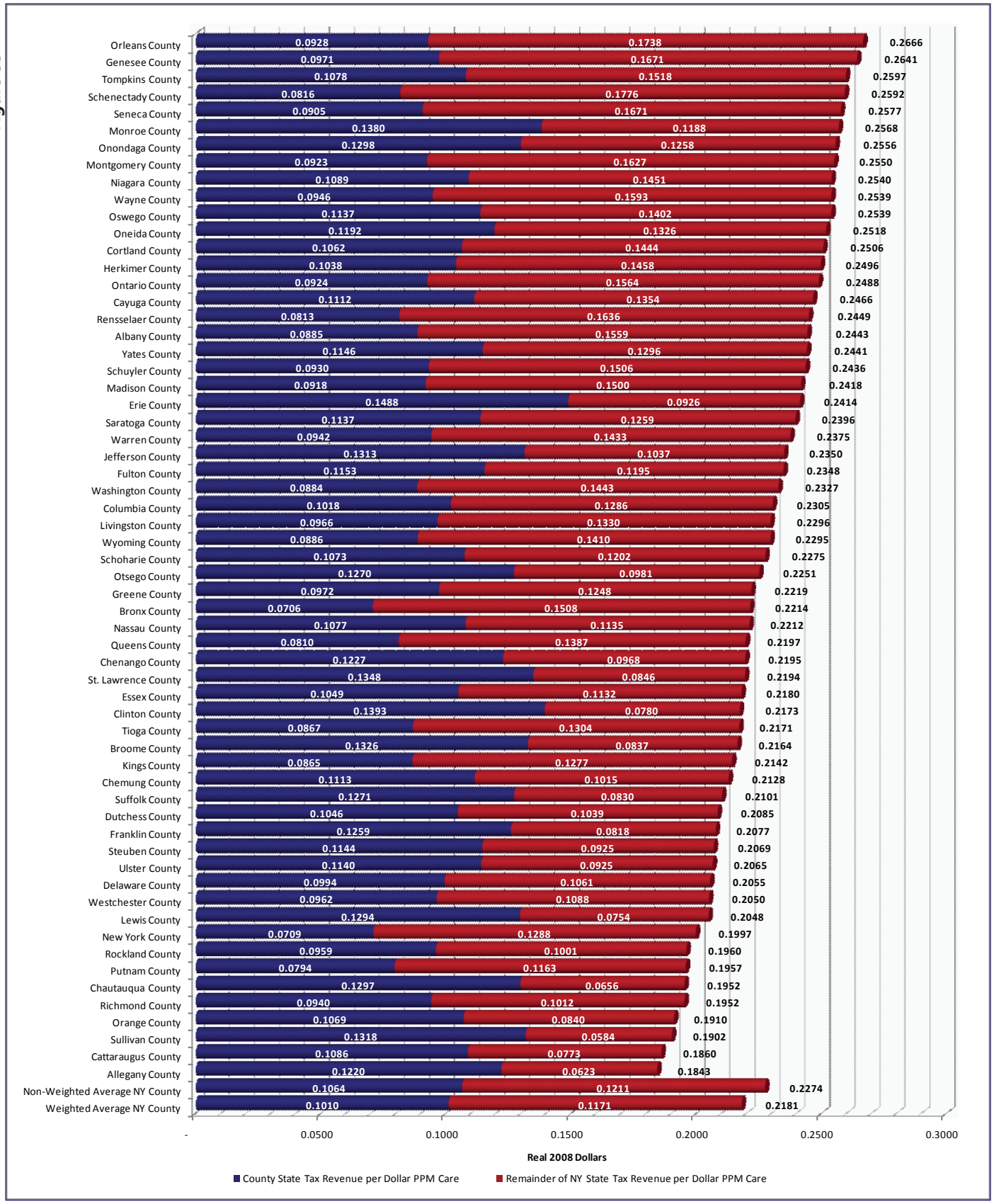


Figure 33: State of New York State Tax Revenue per Dollar Private Practice Medical Care by County, 2008. NY state tax revenue collected per dollar spent on PPM care in each county in the State of New York. The blue portion of the bar for each county represents state tax revenue collected in the county itself, the red portion represents state tax revenue collected in the remainder of the State of New York.

Figure 34

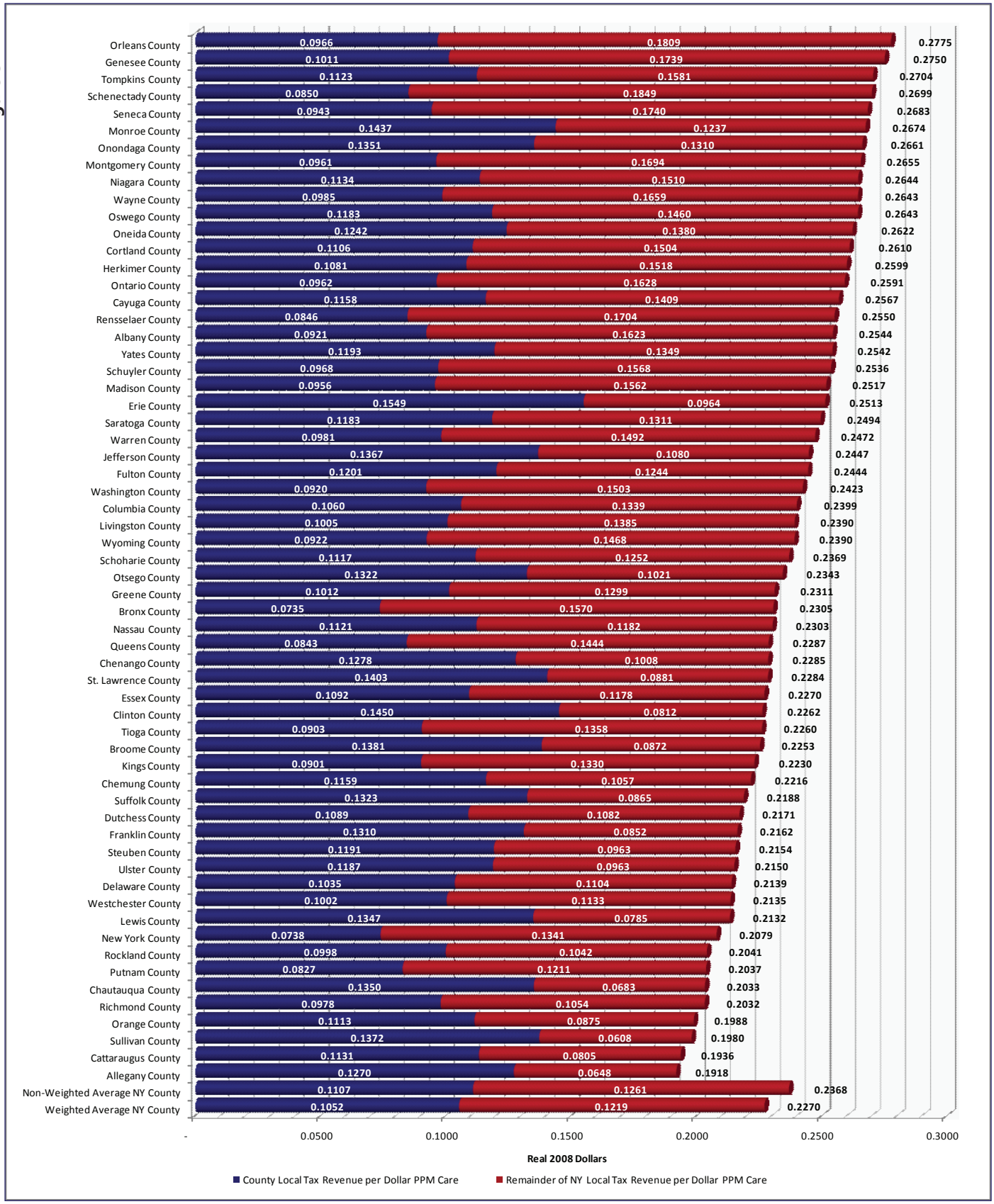


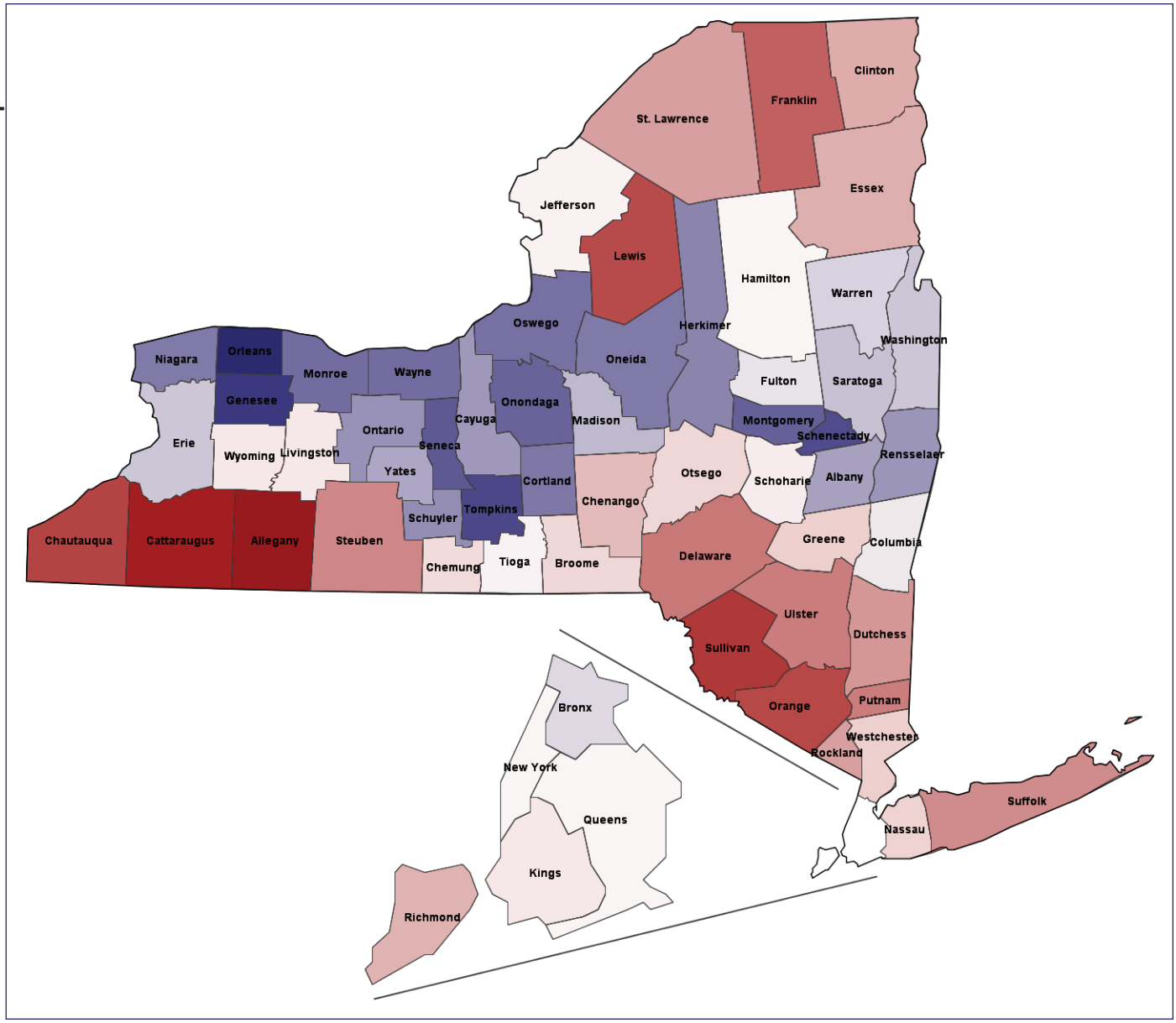
Figure 34: State of New York Local Tax Revenue per Dollar Private Practice Medical Care by County, 2008. NY local tax revenue collected per dollar spent on PPM care in each county in the State of New York. The blue portion of the bar for each county represents NY local tax revenue collected in the county itself, the red portion represents local tax revenue collected in the remainder of the State of New York.

in Table 15 (page 97), and is displayed in Figure 34 (page 94). NY tax revenue per dollar for each county relative to the average NY tax revenue per dollar across all counties is displayed in Map 36 (page 96).

Use of these Data as Multipliers

Consideration of the economic impacts of Private Practice Physicians in the State of New York from the perspective of each dollar spent on Private Practice Medical care exposes a set of multipliers that is very simple to use in a number of scenarios. Economic values per dollar Private Practice Medical care given above for the various levels of geographic detail can be used to quickly determine the change in total economic activity caused by a projected change in Private Practice Medical activity. For example, a scenario in which $10 million additional Private Practice Medical care will be provided in Erie County would generate approximately $13.055 million in total economic activity in the county ($10 million x 1.3055), approximately $9.779 million in total economic activity in the remainder of the State of New York ($10 million x 0.9979), and

Map 35



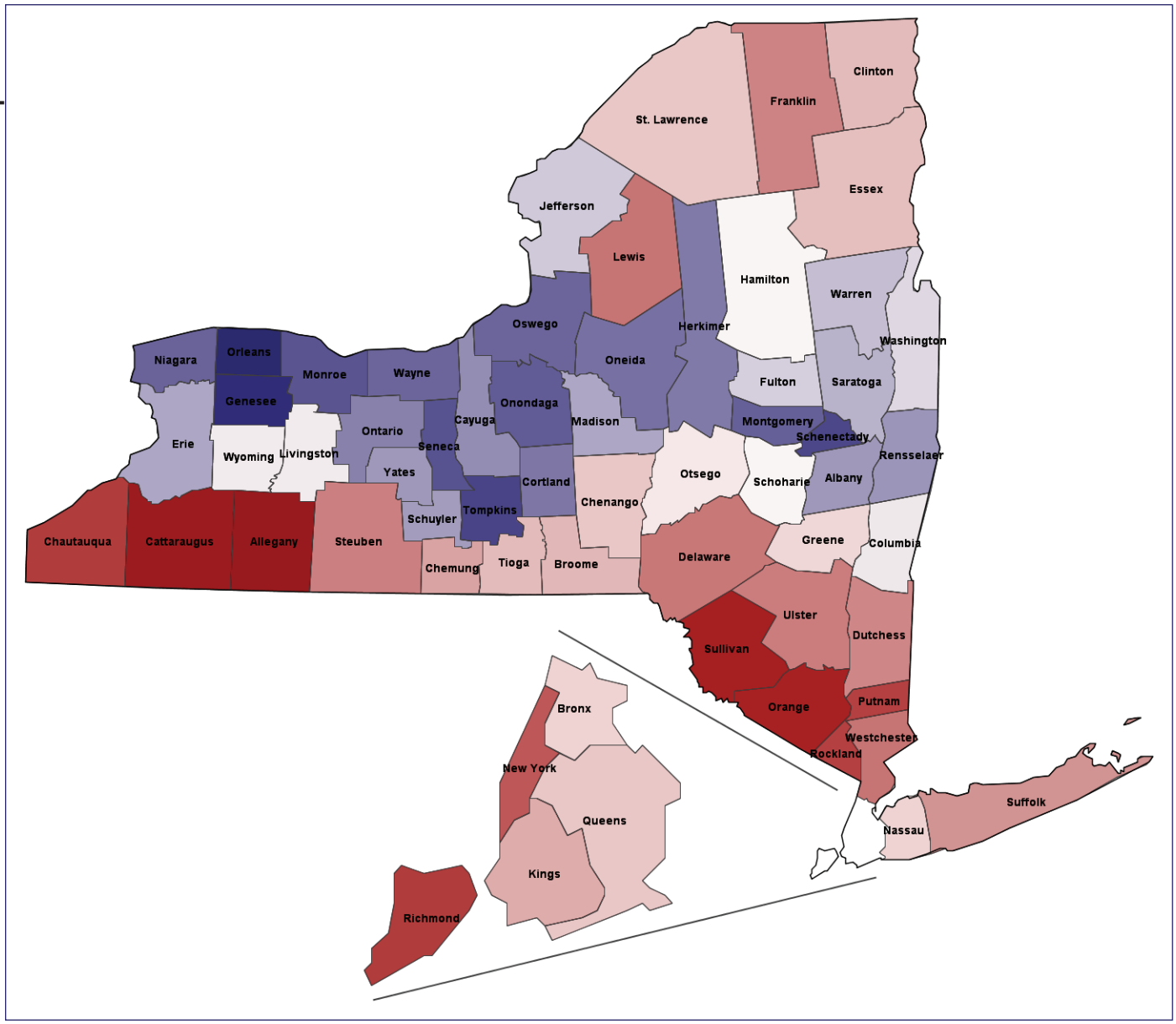
Map 35: State of New York Economic Value per Dollar Private Practice Medical Care by County, 2008. Economic value per dollar spent on PPM care in each county of the State of New York relative to the average economic value across all counties. Shades of red represent economic values lower than the average, with the darkest red indicating just over $.56 below the average. Shades of blue represent economic values higher than the average, with the darkest blue indicating nearly $.44 above the average.

approximately $21.181 million in total economic activity in the remainder of the United States ($10 million x 2.1181), for a total of approximately $44.015 million in total economic activity across all regions.

This multiplier process works equally well to determine NY state tax revenue and NY local tax revenue generated by a projected change in Private Practice Medical activity. The scenario above would generate approximately $2.414 million in NY state tax revenue, of which $1.488 million is in Erie County ($10 million x 0,1488), and $929 thousand is in the remainder of the State of New York ($10 million x 0.0926). Further, the scenario above would generate approximately $2.513 million in NY local tax revenue, of which $1.549 million is in Erie County ($10 million x 0.1549), and $964 thousand is in the remainder of the State of New York ($10 million x 0.0964). Refer to Table 14 (this page) and Table 15 (this page) for applicable MSA and county multipliers, respectively.

text continues on page 99 →

Map 36



Map 36: State of New York Tax Revenue per Dollar Private Practice Medical Care by County, 2008. NY state tax revenue and NY local tax revenue per dollar spent on PPM care in each county of the State of New York relative to the average NY state tax revenue and NY local tax revenue across all counties. Shades of red represent tax revenues lower than the average, with the darkest red indicating just under 4.3¢ below the average NY state tax revenue and 4.5¢ below the average NY local tax revenue. Shades of blue represent tax revenues higher than the average, with the darkest blue indicating nearly 3.9¢ above the average NY state tax revenue and 4.1¢ above the average NY local tax revenue.

Table 14

MSA Name	MSA Economic Value	Rest of NY Economic Value	Rest of US Economic Value	MSA State Tax Revenue	Rest of NY State Tax Revenue	MSA Local Tax Revenue	Rest of NY Local Tax Revenue
Albany-Schenectady-Troy	1.5940	0.8089	2.0130	0.1743	0.0713	0.1815	0.0742
Binghamton	1.4184	0.7303	2.3142	0.1501	0.0663	0.1563	0.0690
Buffalo-Niagara Falls	1.4399	0.8824	2.0980	0.1690	0.0734	0.1760	0.0764
Elmira	1.1617	0.9967	2.2949	0.1113	0.1015	0.1159	0.1057
Glens Falls	1.1389	1.1689	2.2365	0.1168	0.1202	0.1216	0.1251
Ithaca	1.0989	1.5083	1.8951	0.1078	0.1518	0.1123	0.1581
Kingston	1.0172	0.9193	2.5886	0.1140	0.0925	0.1187	0.0963
New York-Long Island	2.0216	0.0997	2.3538	0.1994	0.0103	0.2076	0.0107
Poughkeepsie-Newburgh-Middleton	1.0579	0.8461	2.5547	0.1142	0.0853	0.1189	0.0888
Rochester	1.4543	1.0532	1.9296	0.1634	0.0921	0.1701	0.0959
Syracuse	1.3453	1.1828	1.8295	0.1529	0.1020	0.1592	0.1062
Utica-Rome	1.1444	1.3536	1.9297	0.1341	0.1176	0.1396	0.1225
Capital/Northern non-MSA	1.2001	0.9469	2.2715	0.1502	0.0778	0.1564	0.0810
East Central non-MSA	1.0399	1.2040	2.3075	0.1105	0.1184	0.1151	0.1232
Central non-MSA	1.2004	0.9530	2.3371	0.1324	0.0910	0.1378	0.0948
Southwest non-MSA	1.1284	0.8502	2.4780	0.1290	0.0802	0.1343	0.0835
Non-Weighted Average NY MSA	1.2788	0.9690	2.2145	0.1393	0.0907	0.1451	0.0945
Weighted Average NY MSA	1.7964	0.3675	2.2843	0.1838	0.0342	0.1914	0.0356

Table 14: State of New York Economic Value and Tax Revenue per Dollar Private Practice Medical Care by MSA, 2008. Economic value per dollar spent on Private Practice Medical care within each MSA and MSA-equivalent in the State of New York for the MSA itself, the remainder of the State of New York, and the remainder of the United States. Also, NY state tax revenue and NY local tax revenue generated per dollar spent on Private Practice Medical Care within each MSA of the State in New York for the MSA itself and the remainder of the State of New York. All values are in real 2008 dollars.

Table 15

County Name	County Economic Value	Rest of NY Economic Value	Rest of US Economic Value	County State Tax Revenue	Rest of NY State Tax Revenue	County Local Tax Revenue	Rest of NY Local Tax Revenue
Albany County	1.2742	1.0910	2.0238	0.0885	0.1559	0.0921	0.1623
Allegany County	1.1025	0.5249	2.8588	0.1220	0.0623	0.1270	0.0648
Bronx County	1.0333	1.2117	2.1379	0.0706	0.1508	0.0735	0.1570
Broome County	1.3474	0.7761	2.3198	0.1326	0.0837	0.1381	0.0872
Cattaraugus County	1.0834	0.6068	2.7614	0.1086	0.0773	0.1131	0.0805
Cayuga County	1.0141	1.3657	1.9545	0.1112	0.1354	0.1158	0.1409
Chautauqua County	1.1075	0.6817	2.6966	0.1297	0.0656	0.1350	0.0683
Chemung County	1.1448	0.9822	2.2949	0.1113	0.1015	0.1159	0.1057
Chenango County	1.2121	0.8433	2.4188	0.1227	0.0968	0.1278	0.1008
Clinton County	1.1443	0.8789	2.3499	0.1393	0.0780	0.1450	0.0812
Columbia County	1.0057	1.2159	2.3007	0.1018	0.1286	0.1060	0.1339
Cortland County	1.0614	1.3898	1.8511	0.1062	0.1444	0.1106	0.1504
Delaware County	1.1264	0.7798	2.6962	0.0994	0.1061	0.1035	0.1104
Dutchess County	1.0113	0.9618	2.4588	0.1046	0.1039	0.1089	0.1082
Erie County	1.3055	0.9779	2.1181	0.1488	0.0926	0.1549	0.0964
Essex County	1.0328	0.9985	2.4891	0.1049	0.1132	0.1092	0.1178
Franklin County	1.1761	0.6725	2.5769	0.1259	0.0818	0.1310	0.0852
Fulton County	1.0471	1.1788	2.2074	0.1153	0.1195	0.1201	0.1244
Genesee County	0.9888	1.5873	1.7330	0.0971	0.1671	0.1011	0.1739
Greene County	1.0034	1.0986	2.3380	0.0972	0.1248	0.1012	0.1299
Herkimer County	0.9916	1.4301	1.9268	0.1038	0.1458	0.1081	0.1518
Jefferson County	1.0459	1.1262	2.1744	0.1313	0.1037	0.1367	0.1080
Kings County	1.1055	1.0479	2.2344	0.0865	0.1277	0.0901	0.1330
Lewis County	1.0978	0.7015	2.5663	0.1294	0.0754	0.1347	0.0785
Livingston County	1.0868	1.0650	2.2084	0.0966	0.1330	0.1005	0.1385
Madison County	1.0390	1.2701	2.0661	0.0918	0.1500	0.0956	0.1562

Table 15, continued

County Name	County Economic Value	Rest of NY Economic Value	Rest of US Economic Value	County State Tax Revenue	Rest of NY State Tax Revenue	County Local Tax Revenue	Rest of NY Local Tax Revenue
Monroe County	1.2990	1.1700	1.9278	0.1380	0.1188	0.1437	0.1237
Montgomery County	0.9976	1.4971	1.8981	0.0923	0.1627	0.0961	0.1694
Nassau County	1.2433	0.8642	2.4158	0.1077	0.1135	0.1121	0.1182
New York County	1.6553	0.5373	2.3062	0.0709	0.1288	0.0738	0.1341
Niagara County	1.0387	1.4005	1.8770	0.1089	0.1451	0.1134	0.1510
Oneida County	1.0730	1.3679	1.9297	0.1192	0.1326	0.1242	0.1380
Onondaga County	1.2403	1.2502	1.8222	0.1298	0.1258	0.1351	0.1310
Ontario County	1.1377	1.2545	1.9794	0.0924	0.1564	0.0962	0.1628
Orange County	1.0345	0.7641	2.6446	0.1069	0.0840	0.1113	0.0875
Orleans County	0.9807	1.6492	1.6284	0.0928	0.1738	0.0966	0.1809
Oswego County	1.0054	1.4560	1.7646	0.1137	0.1402	0.1183	0.1460
Otsego County	1.2030	0.9165	2.4614	0.1270	0.0981	0.1322	0.1021
Putnam County	1.0464	0.8695	2.5254	0.0794	0.1163	0.0827	0.1211
Queens County	1.0759	1.1148	2.2350	0.0810	0.1387	0.0843	0.1444
Rensselaer County	1.0301	1.3520	1.9823	0.0813	0.1636	0.0846	0.1704
Richmond County	1.0228	1.0122	2.3583	0.0940	0.1012	0.0978	0.1054
Rockland County	1.0475	0.9452	2.4576	0.0959	0.1001	0.0998	0.1042
St. Lawrence County	1.0688	0.9261	2.4365	0.1348	0.0846	0.1403	0.0881
Saratoga County	1.0794	1.2094	2.0941	0.1137	0.1259	0.1183	0.1311
Schenectady County	1.0931	1.4443	1.8931	0.0816	0.1776	0.0850	0.1849
Schoharie County	1.0185	1.1468	2.2200	0.1073	0.1202	0.1117	0.1252
Schuyler County	0.9852	1.4224	1.8992	0.0930	0.1506	0.0968	0.1568
Seneca County	0.9951	1.5183	1.8030	0.0905	0.1671	0.0943	0.1740
Steuben County	1.1028	0.8347	2.4778	0.1144	0.0925	0.1191	0.0963
Suffolk County	1.0620	0.8859	2.5022	0.1271	0.0830	0.1323	0.0865
Sullivan County	1.2214	0.5332	2.7864	0.1318	0.0584	0.1372	0.0608
Tioga County	1.0136	1.1865	2.1293	0.0867	0.1304	0.0903	0.1358
Tompkins County	1.0728	1.4726	1.8951	0.1078	0.1518	0.1123	0.1581
Ulster County	1.0033	0.9067	2.5886	0.1140	0.0925	0.1187	0.0963
Warren County	1.0983	1.1658	2.2530	0.0942	0.1433	0.0981	0.1492
Washington County	0.9996	1.2838	2.0777	0.0884	0.1443	0.0920	0.1503
Wayne County	0.9918	1.4754	1.8077	0.0946	0.1593	0.0985	0.1659
Westchester County	1.0579	1.0416	2.4368	0.0962	0.1088	0.1002	0.1133
Wyoming County	1.0052	1.1506	2.1873	0.0886	0.1410	0.0922	0.1468
Yates County	1.0365	1.3081	2.0927	0.1146	0.1296	0.1193	0.1349
Unweighted Average NY County	1.0922	1.0950	2.2222	0.1064	0.1211	0.1107	0.1261
Weighted Average NY County	1.2258	0.9381	2.2843	0.1010	0.1171	0.1052	0.1219

Table 15: State of New York Economic Value and Tax Revenue per Dollar Private Practice Medical Care by County, 2008. Economic value per dollar spent on Private Practice Medical care within each county in the State of New York for the county itself, the remainder of the State of New York, and the remainder of the United States. Also, NY state tax revenue and NY local tax revenue generated per dollar spent on Private Practice Medical Care within each county of the State in New York for the county itself and the remainder of the State of New York. All values are in real 2008 dollars.

Conclusions of the Study

The activity of Physicians engaged in the Private Practice of Medicine is a large, and increasingly important, contributor to the broader economy. In the State of New York during 2008, Private Practice Physicians supported approximately three percent of all employment, six percent of all personal income, and five percent of all corporate sales generated in the state. By 2020, Private Practice Physicians are projected to support approximately 3.5 percent of all employment, seven percent of all personal income, and five percent of all corporate sales generated in the state. The industry into which the activity of Private Practice Physicians is classified, NAICS 62111 - Offices of Physicians, ranks among the largest industries in the state by all measures presented in this study.

Put in dollar terms, physicians engaged in Private Practice Medicine generate economic activity on an enormous scale. In the State of New York during 2008, Offices of Physicians supported more than 330 thousand jobs, created more than $24 billion in personal income, generated more than $44 billion in corporate sales, and led to the collection of more than $4.5 billion in state tax revenues and more than $4.6 billion in local tax revenues.

Throughout the United States as a whole during 2008, Offices of Physicians supported more than 670 thousand jobs, created more than $41 billion in personal income, and generated more than $91 billion in corporate sales. By 2020, these numbers for both the State of New York and the United States as a whole are projected to grow significantly.

Each dollar of Private Practice Medical care provided in the State of New York leads to significant returns for the state economy. Specifically, each dollar of care provided generates an additional $1.16 in economic activity within the state, and leads to the collection of $0.22 in state tax revenue and $.23 in local tax revenue.

In addition to the less quantifiable benefits Private Practice Physicians in the State of New York provide through the improvement of public health, they also provide huge and quantifiable benefits to the economy. Private Practice Physicians in the State of New York are well-positioned to make compelling economic arguments in support of their goals, and the goals of the patients they serve.

About the Study Authors

Specialized Analytics

http://www.redyn.com

Specialized Analytics was founded in 1993 by Tre Hutchison and the late Dr. Thomas Tanner with the vision of creating a new set of comprehensive, consistent, and theoretically sound economic analysis tools. Today, it administers the largest, most detailed economic model available - Redyn. We provide our clients recognized economic modeling, forecasting, analysis, and data management expertise toward the creation of highly customized solutions.

Dr. Thomas Tanner, co-founder of Specialized Analytics, was widely recognized for his talent, insight, and creativity as a modeling economist. His dissertation work at the University of Georgia solidified the theory and framework for the next generation of economic analysis tools. It furthers the work of Nobel laureate economists Dr. Paul Krugman and Dr. Joseph Stiglitz, merges that work with other important economic theory, and paves the way for highly detailed, dynamic, massively multi-regional economic analysis.

Tre Hutchison, co-founder and Principal of Specialized Analytics, is a recognized expert in application and database design, process optimization, and performance tuning. He has completed numerous large application and database design and optimization projects in the public and private sectors. Through his 16 year's work on the Redyn model, he has also gained expertise in economic modeling, forecasting, and impact analysis.

Kavet, Rockler & Associates

http://www.kavetrocker.com

With more than 50 years of combined professional experience, Nicolas Rocker and Thomas Kavet offer a wide range of professional economic consulting services to public and private sector entities. Our services are highly customized for each client – utilizing our expertise in economic and demographic forecasting, regional economic impact analysis, unbiased public policy research and analysis, and creative analytic solutions.

Dr. Nicolas O. Rockler, co-founder of Kavet, Rockler & Associates, is a well known expert in regional economics, input-output economics, and public policy analysis. Dr. Rockler has previously held positions as a Post-Doctoral Research Fellow at the Department of Urban Studies and Planning at MIT, where he received his Ph.D., and as a Senior Economist at Data Resources, Inc. (now Global Insight), where he developed the first U.S. metropolitan area forecasting models.

Thomas E. Kavet, co-founder and President of Kavet, Rockler & Associates, is a recognized expert in public policy analysis, construction and real estate economics, and regional economic forecasting. Before starting KRA, Mr. Kavet was a Vice President at Data Resources/McGraw-Hill, the nation's largest economic forecasting and consulting firm (now Global Insight), where he started and led the Construction and Real Estate Information Service.

About the Study Sponsor

This study is sponsored by the Medical Society of the State of New York (MSSNY), an organization representing the interests of patients and physicians in an ongoing effort to assure quality health care services for all New Yorkers.

The MSSNY is the largest and oldest organization of licensed physicians, medical residents, and medical students in New York State. Members participate in both the state society and in their local county medical societies.

The MSSNY is a non-profit organization committed to representing the medical profession as a whole and advocating health related rights, responsibilities and issues. The MSSNY strives to promote and maintain high standards in medical education and in the practice of medicine in an effort to ensure that quality medical care is available to the public.

Appendices

Appendix A

Methodology: Geography of the Study Regions

This study describes economic impacts at the county level, the metropolitan statistical area level, and the state level, as described in ***About this Study: Study Regions***. This appendix presents more detailed information about the sub-state geography.

State of New York Counties

There are 62 counties in the State of New York. Those counties, which can be located for reference in Map A1 (page 103), are:

- Albany County
- Allegany County
- Bronx County
- Broome County
- Cattaraugus County
- Cayuga County
- Chautauqua County
- Chemung County
- Chenango County
- Clinton County
- Columbia County
- Cortland County
- Delaware County
- Dutchess County
- Erie County
- Essex County
- Franklin County
- Fulton County
- Genesee County
- Greene County
- Hamilton County
- Herkimer County
- Jefferson County
- Kings County
- Lewis County
- Livingston County
- Madison County
- Monroe County
- Montgomery County
- Nassau County
- New York County
- Niagara County
- Oneida County
- Onondaga County
- Ontario County
- Orange County
- Orleans County
- Oswego County
- Otsego County
- Putnam County
- Queens County
- Rensselaer County
- Richmond County
- Rockland County
- St. Lawrence County
- Saratoga County
- Schenectady County
- Schoharie County
- Schuyler County
- Seneca County
- Steuben County
- Suffolk County
- Sullivan County
- Tioga County
- Tompkins County
- Ulster County
- Warren County
- Washington County
- Wayne County
- Westchester County
- Wyoming County
- Yates County

Map A1

Map A1: County Level Map of the State of New York. For ease of use, the five smallest counties in the New York City area have been enlarged to the left of their actual location in the state.

State of New York Metropolitan Statistical Areas and Equivalents

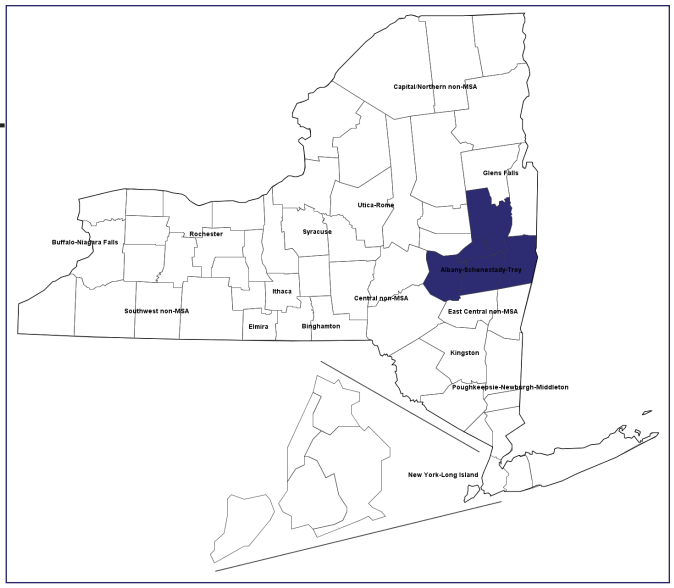
There are 12 metropolitan statistical areas (MSA) contained wholly or partially in the State of New York. For the sake of both brevity and clarity, state designators have been removed from the MSA names for this study. In addition, the New York-Northern NJ-Long Island MSA is renamed New York-Long Island as impacts are only reported for the State of New York portion of that MSA.

In addition to the 12 MSAs, all counties in the State of New York not represented in an MSA are grouped into four non-MSA regions. These groupings are determined by relative location within the state.

A map of each MSA and non-MSA region, as well as a list of component counties, is presented on pages 104 through 107 in Maps A2 through A17.

text continues on page 108 →

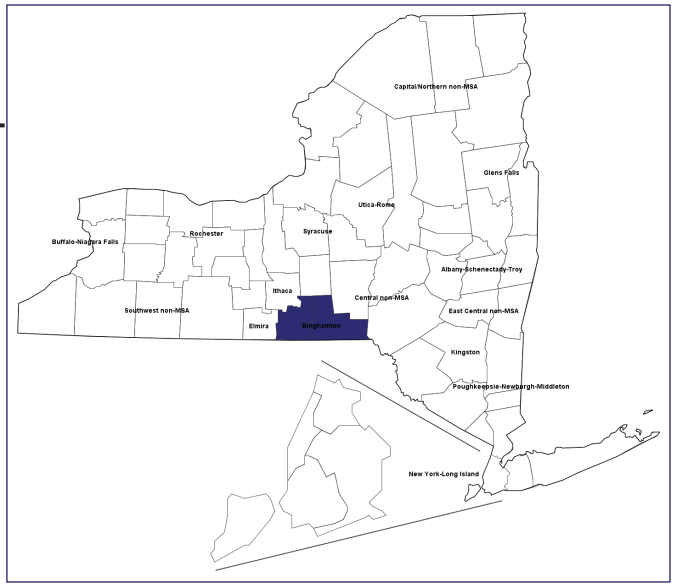
Map A2



Map A2: Albany-Schenectady-Troy

- Albany County
- Rensselaer County
- Saratoga County
- Schenectady County
- Schoharie County

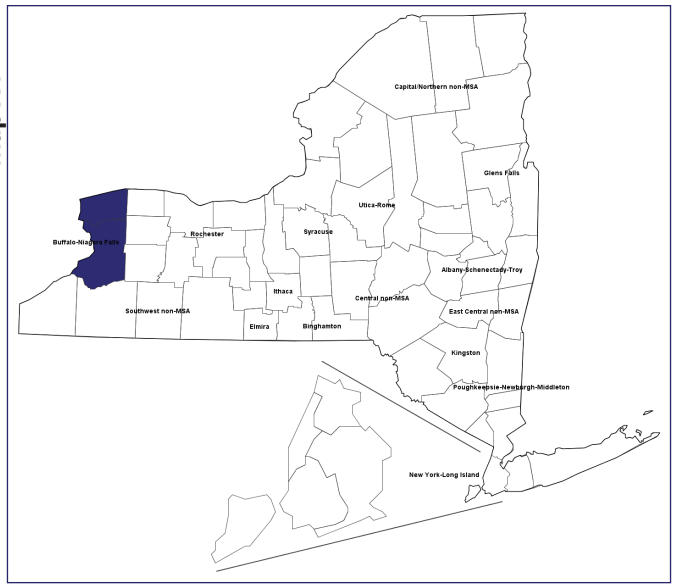
Map A3



Map A3: Binghamton

- Broome County
- Tioga County

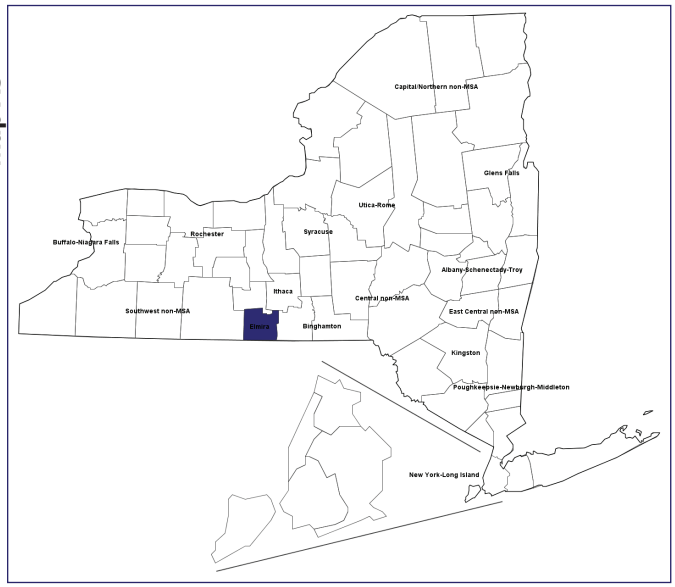
Map A4



Map A4: Buffalo-Niagara Falls

- Erie County
- Niagara County

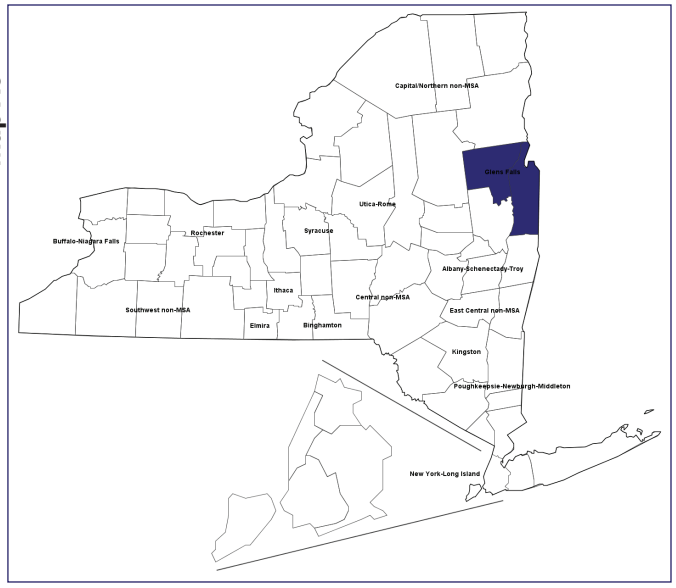
Map A5



Map A5: Elmira

- Chemung County

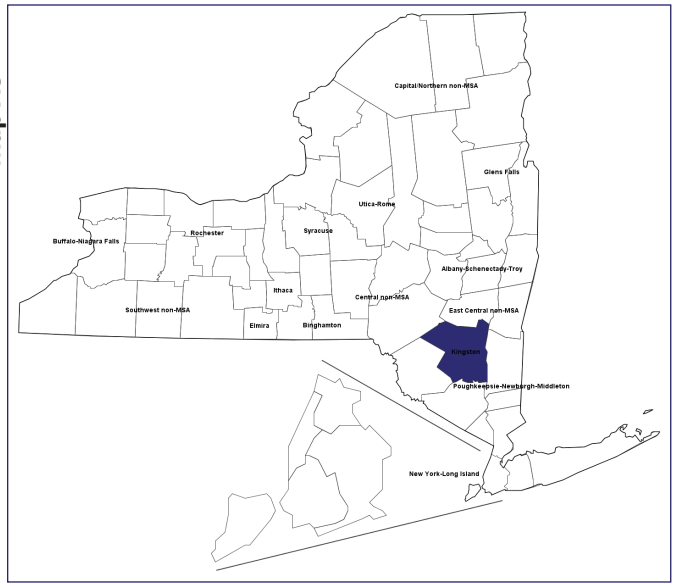
Map A6



Map A6: Glens Falls

- Warren County
- Washington County

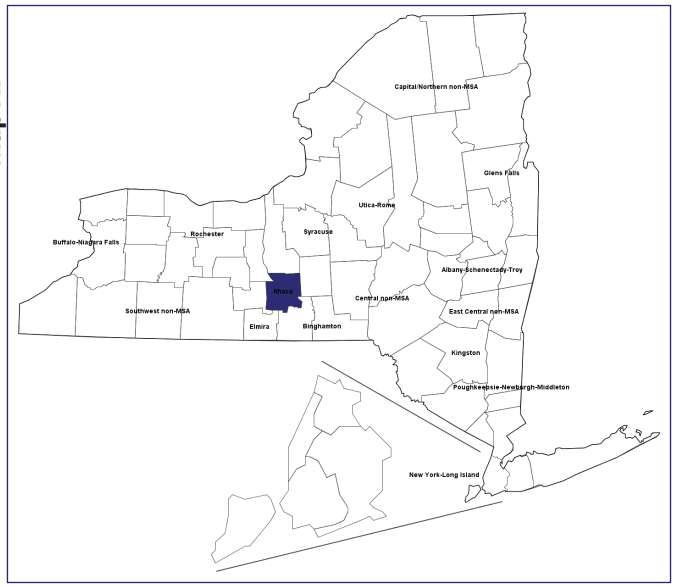
Map A8



Map A8: Kingston

- Ulster County

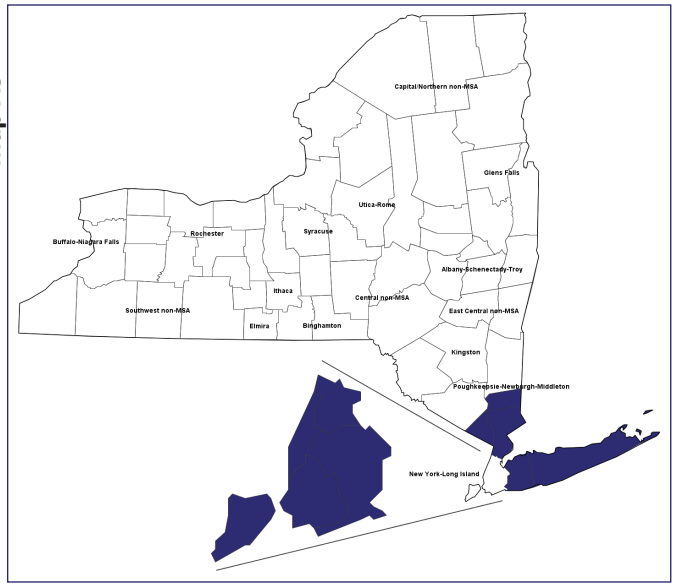
Map A7



Map A7: Ithaca

- Tompkins County

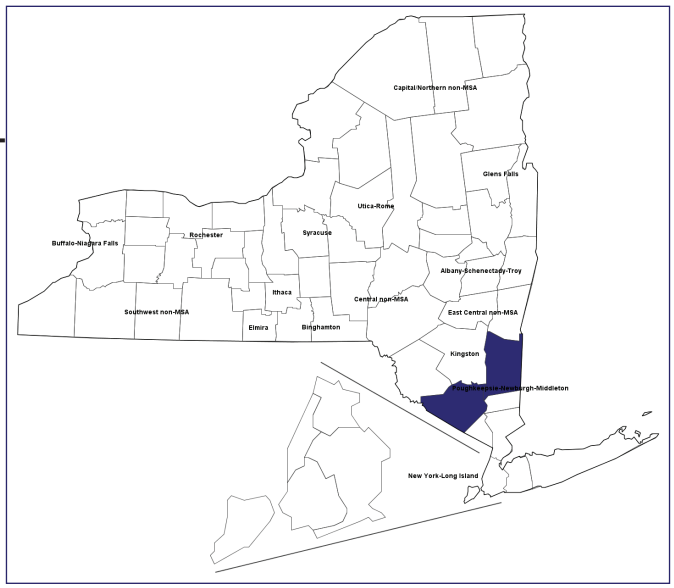
Map A9



Map A9: New York-Long Island

- Bronx County
- Kings County
- Nassau County
- New York County
- Putnam County
- Queens County
- Richmond County
- Rockland County
- Suffolk County
- Westchester County

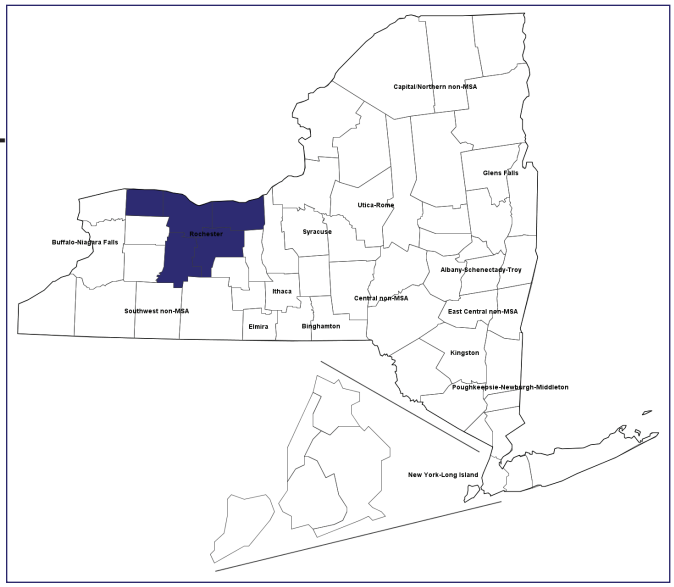
Map A10



Map A10: Poughkeepsie-Newburgh-Middleton

- Dutchess County
- Orange County

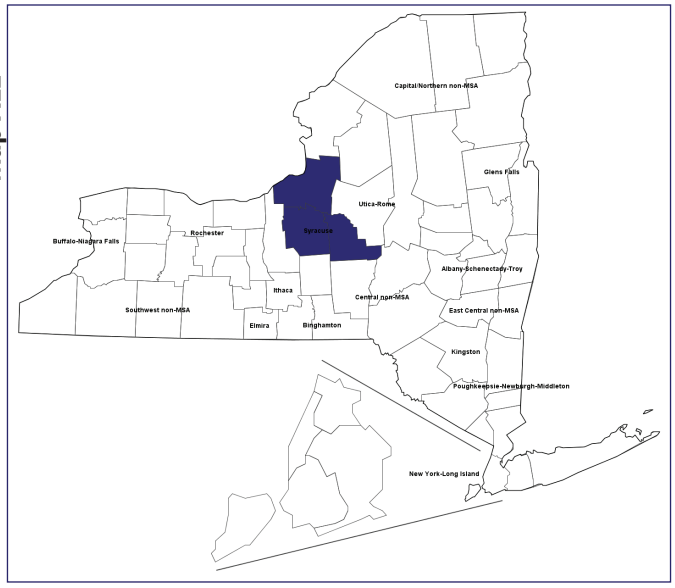
Map A11



Map A11: Rochester

- Livingston County
- Monroe County
- Ontario County
- Orleans County
- Wayne County

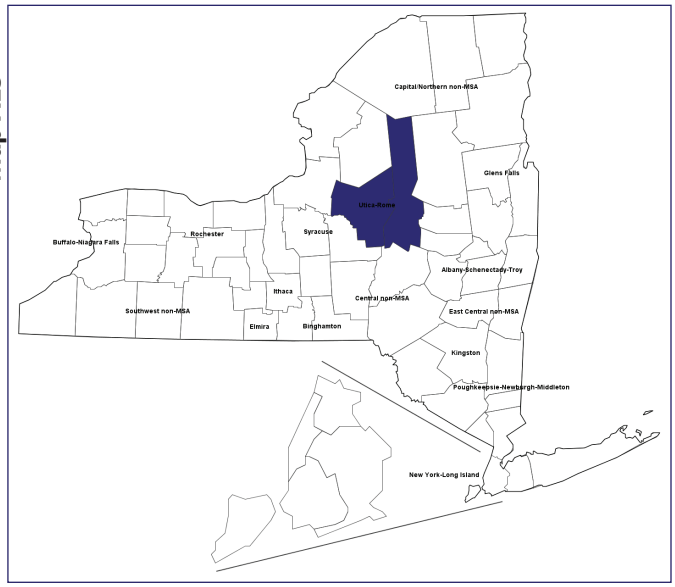
Map A12



Map A12: Syracuse

- Madison County
- Onondaga County
- Oswego County

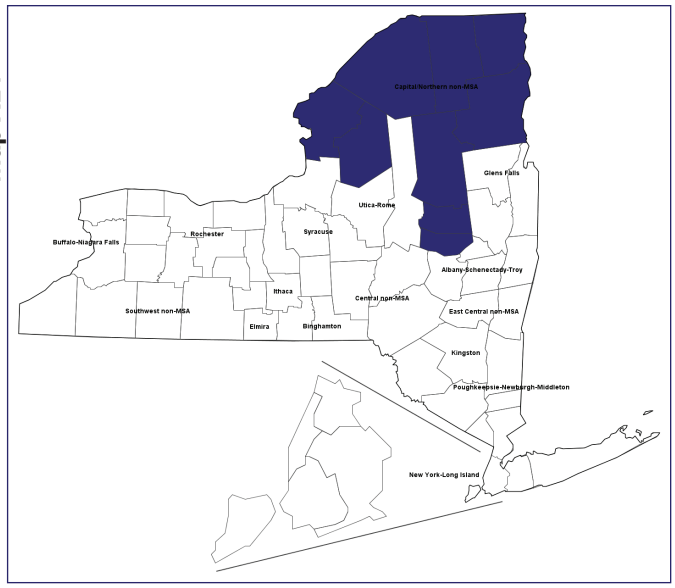
Map A13



Map A13: Utica-Rome

- Herkimer County
- Oneida County

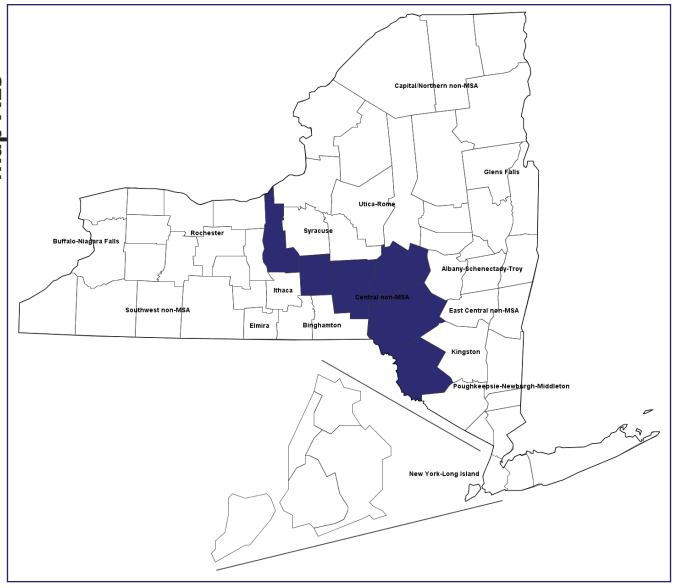
Map A14



Map A14: Capital/Northern non-MSA

- Clinton County
- Essex County
- Franklin County
- Fulton County
- Hamilton County
- Jefferson County
- Lewis County
- Montgomery County
- St. Lawrence County

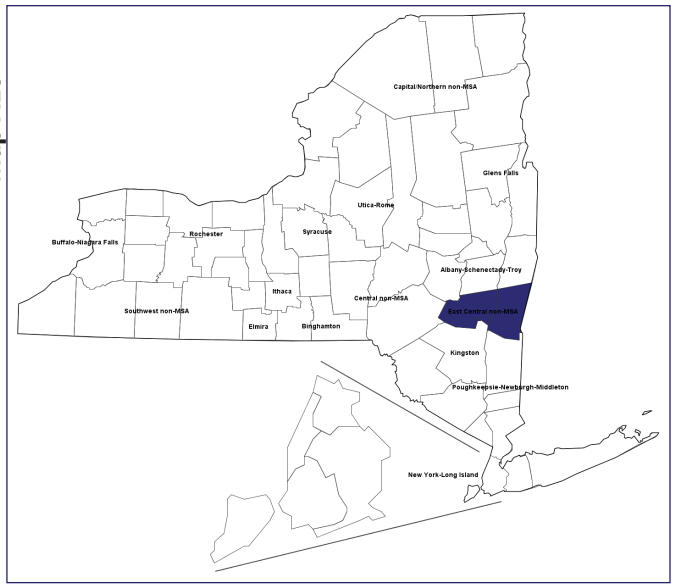
Map A15



Map A15: Central non-MSA

- Cayuga County
- Chenango County
- Cortland County
- Delaware County
- Otsego County
- Sullivan County

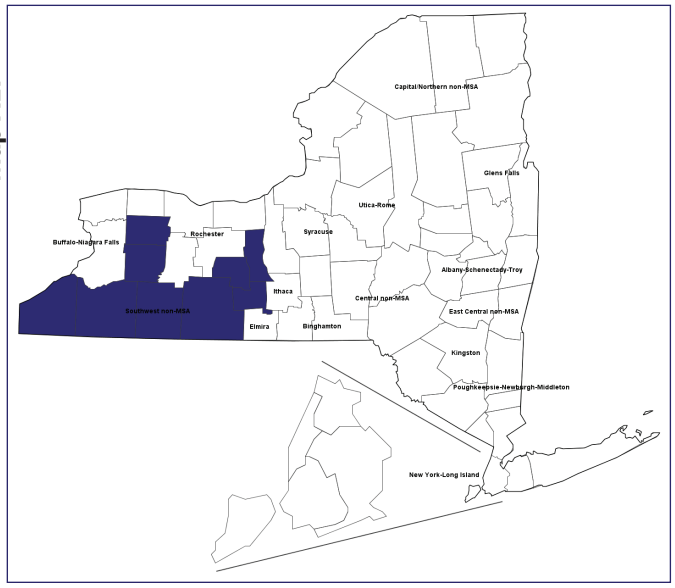
Map A16



Map A16: East Central non-MSA

- Columbia County
- Greene County

Map A17



Map A17: Southwest non-MSA

- Allegany County
- Cattaraugus County
- Chautauqua County
- Genesee County
- Schuyler County
- Seneca County
- Steuben County
- Wyoming County
- Yates County

Appendix B
Methodology: Detailed Description of the Redyn Model

The Regional Dynamics Modeling System: A Multi-Sector, Multi-Year, Multi-Modal, County Level Computable Geographical Equilibrium Model of the United States Economy

Introduction

Paul Krugman (1998) expressed a hope that the new economic geography research might one day develop "'computable geographical equilibrium' models, which can be used to predict the effects of policy changes, technological shocks, etc. on the economy's spatial structure in the same way that such models are currently used to predict the effects of changes in taxes and trade policy on the economy's industrial structure." However, he acknowledges that "preliminary efforts in this direction by several researchers, myself included, have found that such models are not at all easy to calibrate to actual data." It is the objective of this paper to unite several different threads of economic research to develop the framework for just such a regional "computable geographic equilibrium" model of the United States economy. Key tools and concepts that will be incorporated into the model will include: input-output analysis, Social Accounting Matrices, gravity modeling, and new economic geography. The model framework that is developed is extremely simple, at least by the standards of most computable general equilibrium models, yet is capable of generating a wide range of extremely complex economic behaviors/outcomes, can model these behaviors at an extremely fine level of geographic and sectoral detail, and can be calibrated to "real world" data.

The Sector-Commodity Relationships in the Model: A Merged IO-SAM Framework

The data framework for the model is based on blending the traditional input-output tables of Leontief (1941), Stone and Brown (1962), with the closely related Social Accounting Matrix (SAM) framework as formalized by Pyatt and Round (1985) based upon the earlier work of Stone that has become widely used in recent decades. The beauty of the IO framework originally developed by Leontief is its utter simplicity – each industry sells its output to itself, to other industries, or to final demanders. Therefore, on a single table, you can capture all the activity in an economy. Stone and Brown, however, observed that the Leontief IO table implicitly failed to recognize that every industry uses a mix of commodities, and that every industry makes a mix of commodities. The commodities are a necessary component to describe accurately and explicitly the system's behavior. Mathematically, under the make and use table configuration of Stone and Brown, "industries" can be interpreted as a transformation system that converts a menu of commodities and factor inputs into a menu of commodities. Generally, the Stone and Brown IO tables can be used to model industry behavior using either Leontief or Cobb-Douglas production functions. The configuration is particularly well suited to Cobb-Douglas functions because all cells can be interpreted as the constant budget share of a Cobb-Douglas production function.

However, these traditional IO tables (consisting of a "make" table that identifies total spending on each commodity by each sector in the economy, and a "use" table that identifies the total sales of each commodity by each sector in the economy) have very little to contribute when we attempt to examine or model anything beyond the industry-commodity-industry interactions. Social Accounting Matrices attempt to address these shortcomings by explicitly introducing household, government, and capital markets, and a host of behaviors such as taxation, intergovernmental transfers, etc. The SAM framework has the advantage of being absolutely comprehensive, because every transaction type is accounted for in some cell of a SAM matrix. However, while a SAM is comprehensive from an accounting perspective (every transaction shows up in some cell in the matrix), it is not complete in an economic sense, in that each cell does not represent a unique exchange of a commodity for money, as it does in an IO make and use table. This model begins with an alternative framework that draws on the comprehensiveness of the SAM, and the simplicity and economic cohesion of the IO make and use tables. The proposed framework involves viewing the economy as a continuous process where every sector

Figure B1

MAKE TABLE Commodities / Sectors	Producer Commodities	Labor	Transfer Payments	Government Goods	Financial Capital	Physical Capital	Land
Producers		■	■	■	■	■	■
Employed Labor	■		■	■	■	■	■
Remittance Cohorts	■	■		■	■	■	■
Government	■	■	■		■	■	■
Investors	■	■	■	■		■	■
Speculators	■	■	■	■	■		■
Land	■	■	■	■	■	■	

Figure B2

USE TABLE Sector / Commodities	Producers	Employed Labor	Remittance Cohorts	Government	Investors	Speculators	Land
Producer Commodities							■
Labor		■	■		■		■
Tran Pmts/Taxes/Fees	■	■	■		■	■	■
Government Goods							■
Financial Capital	■	■	■	■	■		
Physical Capital						■	■
Land							■

Figures B1-B2: A merged SAM/IO framework for the make and use tables. Note that the gray cells in the figure represent areas that are likely to contain either zeros or insignificantly small transactions.

of the economy is identified according to the menu of commodities they purchase and the menus of commodities they sell. The resulting merged framework is presented in Figures B1-B2 (this page).

It is now possible to merge the IO and SAM methods of conceptualizing an economy into a unified system. The unified system's row elements in the make table include all the various producer industries generally included in make tables. They also include rows for a labor sector, "remittance cohort" sector (remembering that unemployed labor, retirees, and other transfer recipients are accounted for explicitly within this sector), and government rows. Finally, the make table adds "investor" rows to produce financial capital and "speculator" rows to produce physical capital as will be described in a moment.

The unified system also adds several columns to the traditional make table. The new columns include a "labor commodity" representing the wage bill produced by the labor sector added above as a make table row; a transfer payments commodity; and federal, state and local government commodities. They also include "financial capital" columns to represent commodities (dividends, interest, and rent) produced by the investor sector through the savings process; and "physical capital" columns to represent the residential and nonresidential capital commodity outputs of the speculator industries.

Several columns in the make table require additional discussion. A transfer payment column is added to represent the "commodity" produced by remittance cohorts such as unemployed labor and retirees. Conceptually, we are simply saying that unemployed labor and retirees are producing a commodity because the very fact that they are being compensated is evidence for the commodity itself. One might debate the wisdom or rationale behind the transfer payments, but what is beyond doubt is that unemployed labor and retirees are producing some commodity, which some entity or entities are purchasing, based upon some decision making criterion (optimizing function). This is all that matters from

a modeling perspective. Similarly, additional make table columns include several government commodities, which are produced by the government "industries" rows added to the make table. Again, we will infer the presence of the commodity from the presence of the transaction (taxes). The make table also will include additional columns for residential and nonresidential physical capital, which will be the commodity produced by the speculator industries that were added as rows in the make table.

A use table can be constructed along similar lines. As with make table rows, the use table will add columns for a labor sector, remittance cohorts, government, investors, and speculators. The use table also will add rows for labor; transfer payments, government taxes, and fees; financial capital; and residential and nonresidential physical capital. The labor sector will use a mix of commodities once relegated to the use table's final demand portion. In the same manner, remittance cohorts and government also will use a mix of commodities from the final demand portion of the traditional use table.

The role of the proposed speculator industries deserves a brief explanation. Each speculator sector will use the mix of commodities identified in the traditional use table under investment final demand, in addition to the financial capital good, to produce the physical capital good(s) identified in the make table. The speculator sector is something of a "ghost in the machine" because it is a mechanism the model will use to insure that the presumably quite mobile financial capital commodity flows through speculator intermediaries to purchase presumably relatively immobile physical capital. As we develop an economic geography model of the United States, it is critical accurately to model where demand actually occurs, and introducing the speculator intermediary helps facilitate this. Finally, producer industries, in addition to using the commodities identified in a traditional IO table, also use labor, government, and physical capital commodities, which traditionally are identified as value added components in the use table.

Two industries receive very special treatment in the model, as they will both figure prominently in the behavioral equations and in the ultimate geographic equilibrium: the "real estate" sector (North American Industry Classification System code 531) and the "owner occupied dwellings" sector, which is not identified in the NAICS coding system, but is rather a constructed sector used in the make and use tables produced by both the Bureau of Economic Analysis (BEA) and Bureau of Labor Statistics (BLS) to guarantee compatibility with the United States national Income and Product Accounts. These industries are critical for the model, in that they include land values, which is the one fixed geographic commodity in our model. Land, as we shall see shortly, is the only completely immobile commodity in the model, and land prices are the one factor that will invariably act to disperse economic activity. As such, the "other value added" components of these two industries are extracted, and are labeled as a separate land sector, producing a completely immobile land commodity. The only commodity used by the land sector is financial capital, specifically the rent (real or imputed) paid to landowners.

Several data sources are used to estimate county-level employment for the merged IO-SAM at the NAICS five-digit detail level (709 industries). A complete description of the process used to populate the model can be found in Tanner (2005). The primary data sources are the County Business Patterns (CBP) from the Bureau of the Census, and the Regional Economic Information System (REIS) from the Bureau of Economic Analysis (BEA). Wage Bill (payroll) data, which will populate the regional "labor sector" output in the model and also determine output for many other industries, are derived with the same techniques and from the same sources as the employment data. Specifically, the CBP reports the total annual payroll for each NAICS code up to the five-digit level of detail for the United States and for every region, state, and county. However, total employment and total payroll data are subject to suppressions for privacy. Rather than rely strictly on the various RAS and statistical systems traditionally used to fill all data suppressions, I developed a unique "range constraining" approach, which uses all information available in the CBP series and guarantees internal consistency with unsuppressed wage and employment data (Tanner 2005). All the furnished and estimated CBP wage bill and employment data are then totaled and scaled to match the wage bill and employment data reported in the BEA's REIS, which includes all county and state wages at the two-digit NAICS level of detail and all employment data at one-digit NAICS detail. The REIS directly provides wage bill and employment data for the government and agriculture sectors, and also disposable personal income data by county.

The process used to build a complete set of historical and forecast IO-SAMs is also outlined in greater detail in Tanner (2005). Annual IO tables are constructed using BEA IO make and use tables, as well as biennial 11-year IO forecast tables from the Bureau of Labor Statistics (BLS). The very detailed BEA IO make and use tables are extended year-by-year to match the annual changes in make and use composition implied by the current 10-year BLS IO tables. This generates a detailed annual forecast series of national IO make and use tables. These national merged IO-SAM tables will serve as the US national forecast that will drive the model, and hence, some key characteristics of the resulting national merged IO-SAM make and use tables are in order. First, the national tables explicitly identify international exports of commodities by sector, and international imports of commodities by sector, for each year; these proportions are held constant across all regions in the model, so regardless of location in the US all industries of the same type will be importing the same proportion of their inputs and will be exporting the same proportion of their output. This amounts to an assumption that barriers to international trade in goods and services are sufficiently large that differences in US regional shipment of goods/services do not generate any substantial regional price differences for either imports or exports. Second, the resulting annual IO tables. Include explicit estimates of total US change in business inventories by sector. As with imports and exports, these are held proportional in all regions in the model, so all industries of a particular type will experience the same change in business inventory, regardless of region. As such, the profitability variations between regions, which are explicitly calculated in the model, do not manifest trough differences in the annual change in business inventory. Finally, with respect to the labor sector, The merged IO-SAM is denominated exclusively in terms of dollars of labor bought/sold, and is mute on the point of number of people employed, and hence does not say anything about the degree of slack in the national labor market. As the BLS IO tables that underlie the merged IO-SAM are an element of the BLS long term forecast, the roll of labor market dynamics in the forecast is implicitly imbedded in the IO data, but is not explicit. However, the regional model will explicitly estimate the "profitability" of the labor sector in every region, and as such there will be regional differences in labor market dynamics. Because the purpose of this model is primarily to estimate how total US economic activity is distributed across the 3,110 regions in the model, and because all of the behavioral equations are adapted to estimate the proportion of total economic activity in each region, any US forecast could be imbedded in the model structure without need to revise the allocation equations.

Once the National Merged IO-SAM is constructed, each county's wage bill by sector is used to allocate each sector's national output to counties, the BEA Regional Economic Information System (REIS) income data is used to allocate the other sectors (labor, remittance cohorts, government, and investors) to their respective counties,. and then the regional output by sector is allocated to commodities based on the national merged IO-SAM make table proportions, for the years 2000 and 2001.

This assumes that the commodities produced by a sector are truly joint in the production process, as dictated by a nationally uniform production function for all firms in each industry based on competitive pressures to diffuse advantages quickly across all firms in an industry. Rather than relying upon the traditional matrix inversion technique used in most IO models (but unwieldy in a model with 3,110 interacting regions), in baseline and simulation forecasting the model will apply the national IO tables to estimate a complete multi-regional supply response to indirect and induced demand, and to exogenous final demand, in a search cycle that looks for the suppliers of suppliers across industries and regions. Each cycle in the search process starts up in every region where the gravity-based production function's previous cycle estimated a supply output response, and so on, until the process reaches a minimum incremental output cutoff point.

The New Economic Geography Behavioral Assumptions

Regardless of the entity in question, in our model all will face a Dixit-Stiglitz (1977) constant elasticity of substitution (CES) nested Cobb-Douglas production function of the form:

$$\prod_{g=1}^{G}\left(\widetilde{g}_{gmsrt}\right)^{\theta_{\widetilde{g}s}} = E_{s} + q_{msrt} \qquad (1)$$

For manufacturer m, belonging to sector (industry, labor, government, etc.) s, located in region r, at time t. G represents the total number of goods in the economy . $\widetilde{g}_{gmsrt}$ is the quantity of composite commodity good $\widetilde{g}$ used by manufacturer m, in sector s, in region r, at

time t. $\theta_{\tilde{g}s}$ is the share of composite commodity good $\tilde{g}$ used in sector s at time t. Note that the production function, at any point in time, is sector and time specific, but not region or manufacturer specific. E_s is the fixed cost of production for sector i at time t. Finally, q_{msrt} is the total output of manufacturer m, in sector s, in region r, at time t.

This behavioral equation will apply to all sectors, regardless of the "type" of entity in the traditional sense.

Every sector also faces the traditional constant returns to scale Cobb-Douglas budget share constraint given by

$$\sum_{g=1}^{G} \theta_{gst} = 1 \tag{2}$$

This is completely consistent with agglomeration economies in the new economic geography framework, which is based on increasing returns at the sector level, but not at the firm level. In addition, a constant returns to scale technology is consistent with the input-output data structure used throughout the model.

Because we wish to allow for the possibility of joint production, as implied by the data structure described earlier, we must devise a mechanism for translating between sector production and commodity production. To that end, we specify:

$$q_{msrt} = \sum_{g=1}^{G} \vartheta_{gst} q_{msrt} \tag{3}$$

Where

$$\sum_{g=1}^{G} \vartheta_{gst} = 1 \tag{4}$$

Where ϑ_{gst} is the output share of good g in sector s total output, at time t. For joint production, we shall calculate the U.S. average inputs for commodity g at time t, given by:

$$\theta_{\tilde{g}g} = \sum_{i=1}^{I} \left(\theta_{\tilde{g}s} \frac{Q_{gst}}{\sum_{i=1}^{I} Q_{gst}} \right) \tag{5}$$

Where $\theta_{\tilde{g}g}$ is the input share of commodity $\tilde{g}$ used in the production of commodity g at time t, and S is the total number of sectors. To simplify the process of calculating prices across all regions and commodities in the model, we shall use these input shares in all price and trade calculations. Industries will only reenter the equation when we allow for sector expansion/contraction in a region in response to price changes in the various commodities across regions.

The model we are developing will not rely upon traditional iceberg costs. Instead, we will model the transportation component of the economy as an explicit subset of inputs into the Dixit-Stiglitz production function. The iceberg transportation cost assumption is so thoroughly embedded in the new economic geography literature, that it is identified by Krugman, Fujita and Venables (1999) as one of the three cornerstones of the literature. At the same time, Krugman (1998) says of iceberg transportation costs, "it's too bad that actual transport costs look nothing like that." Since tractability can be maintained with a more realistic transportation assumption, for this model, transportation cost will be given by:

$$\frac{P_{g\tilde{r}t}}{P_{g\tilde{r}t}} = \prod_{\delta=1}^{\Lambda} \gamma_{g\delta t} d_{\delta\tilde{r}t}^{\ \theta_{\delta g}} \tag{6}$$

Where the left hand side of the equation, $\frac{P_{g\tilde{r}t}}{P_{g\tilde{r}t}}$, represents the ratio of the profit-maximizing price as delivered to region r to the profit-maximizing Ex Works (EXW, the price at the factory door before any transportation expenses) price for good g, produced in region $\tilde{r}$, at time t. Δ represents the number of modes of transportation. Each mode of transportation, as mentioned earlier, is a commodity in the overall economy, hence $\Delta \in G$. $d_{\delta\tilde{r}t}$ represents the effective distance from region $\tilde{r}$ to region r by mode δ, at time t. $\theta_{\delta g}$ is the share of transportation commodity δ, used in production of commodity g, at time t, and $\gamma_{g\delta t}$ represents the unit distance cost of shipping commodity g, by mode δ, at time t. In estimating NEG models, the concept of $d_{\delta\tilde{r}t}$ is

often approximated inclusively by straight-line distance or an average travel time between two regions.

Under this formulation of prices, and with the CES assumption of our Dixit-Stiglitz production function, the aggregate profit maximizing behavior of producers will lead to a trade relationship for every commodity-county-county combination of:

$$T_{g\tilde{r}\boldsymbol{r}} = \frac{Q_{g\tilde{r}t} \cdot P_{g\tilde{r}\boldsymbol{r}}^{-\sigma_g}}{\left(\sum_{\tilde{r}=1}^{R} Q_{g\tilde{r}t} \cdot P_{g\tilde{r}\boldsymbol{r}}^{-\sigma_g}\right)} \cdot D_{grt} \tag{7}$$

Where $T_{g\tilde{r}\boldsymbol{r}}$ represents the volume of trade in commodity g, from region $\tilde{r}$ to region r. $Q_{g\tilde{r}t}$ is the aggregate amount of commodity g, produced in region $\tilde{r}$, at time t, and D_{grt} is the aggregate demand for commodity g, in region r, at time t. Note that this is a completely traditional gravity model, in that the degree of interaction is a function of the relative size of the producer, the size of the demander, and the relative distance (shipping cost) between them. The specification encompasses any number of regions and commodities, and sheds the restrictive iceberg price assumption.

Estimating Price Elasticities and Trade Flows in the Model

The gravity model specified above is, by design, demand constrained. If we sum across all supplier regions $\tilde{r}$, we discover that

$$\sum_{\tilde{r}=1}^{R} T_{g\tilde{r}\boldsymbol{r}} = \sum_{\tilde{r}=1}^{R} \left(\frac{Q_{g\tilde{r}t} \cdot P_{g\tilde{r}\boldsymbol{r}}^{-\sigma_g}}{\left(\sum_{\tilde{r}=1}^{R} Q_{g\tilde{r}t} \cdot P_{g\tilde{r}\boldsymbol{r}}^{-\sigma_g}\right)} \cdot D_{grt} \right) \Rightarrow \sum_{\tilde{r}=1}^{R} T_{g\tilde{r}\boldsymbol{r}} = D_{grt} \forall g, r, t \tag{8}$$

That is, the total trade in commodity g from all regions, terminating in region r, is equal to the total demand for good g, in region r, an accounting condition that must be true by definition.

While theoretically complete, accurate empirical estimation of the above model requires one additional step: The addition of an explicit supply constraint to insure that every region in the model sells all output. As we wish to build an applied regional economic model of the United States economy, it is necessary to guarantee that our estimation process also meets the supply constraint that

$$\sum_{r=1}^{R} T_{g\tilde{r}\boldsymbol{r}} = Q_{g\tilde{r}t} \forall g, \tilde{r}, t \tag{9}$$

If the model captured all trade perfectly, this would not be a concern, but in the presence of error in the estimation, we must transform equation (7) into a classic, doubly constrained gravity model following the form developed by Wilson (1970, 1974):

$$T_{g\tilde{r}\boldsymbol{r}} = \frac{Q_{g\tilde{r}t}\left(P_{g\tilde{r}t} \cdot \prod_{\tilde{\delta}=1}^{\Delta} \left(\gamma_{g\delta t} d_{\delta\tilde{r}\boldsymbol{r}}\right)^{\theta_{g\delta}} \right)^{-\sigma_g}}{\sum_{\tilde{r}=1}^{R}\left(Q_{g\tilde{r}t}\left(P_{g\tilde{r}t} \cdot \prod_{\tilde{\delta}=1}^{\Delta} \left(\gamma_{g\delta t} d_{\delta\tilde{r}\boldsymbol{r}}\right)^{\theta_{g\delta}} \right)^{-\sigma_g} \right)} \cdot D_{grt} \tag{10}$$

$$P_{g\tilde{r}t}^{-\sigma_g} = \left(\sum_{r=1}^{R} D_{grt}\left(B_{grt} \cdot \prod_{\tilde{\delta}=1}^{\Delta} \left(\gamma_{g\delta t} d_{\delta\tilde{r}\boldsymbol{r}}\right)^{\theta_{g\delta}} \right)^{-\sigma_g} \right)^{-1} \tag{11}$$

$$B_{grt}^{-\sigma_g} = \left(\sum_{\tilde{r}=1}^{R} Q_{g\tilde{r}t}\left(P_{g\tilde{r}t} \cdot \prod_{\tilde{\delta}=1}^{\Delta} \left(\gamma_{g\delta t} d_{\delta\tilde{r}\boldsymbol{r}}\right)^{\theta_{g\delta}} \right)^{-\sigma_g} \right)^{-1} \tag{12}$$

Where $P_{g\tilde{r}\boldsymbol{r}}$ is the profit maximizing price in region r of commodity g, produced in region $\tilde{r}$, at time t, which will drive the distance decay function in the gravity model. B_{grt} is a balancing factor that insures that all output is sold in all regions in the model; that is, that equation (11) is satisfied. As such, the model of trade flows will closely follow Alonso's (1973) General Theory of Movement, though applied to trade rather than migration, and built from an explicit microeconomic foundation.

Unfortunately, there is no reliable, comprehensive, and timely data source for regional trade flows within the United States. However, if we first difference the trade gravity equation, and are willing to make the simplifying assumption that $B_{grt} = B_{grt-1}$ then we arrive at the following trade relationship:

$$\frac{Q_{g\tilde{r}t}}{Q_{g\tilde{r}t-1}} = \frac{\sum_{r=1}^{R} D_{grt}\left(B_{grt-1}\cdot P_{g\tilde{r}\boldsymbol{t}}\right)^{-\sigma_g}}{\sum_{r=1}^{R} D_{grt-1}\left(B_{grt-1}\cdot P_{g\tilde{r}\boldsymbol{t}-1}\right)^{-\sigma_g}} \quad (13)$$

Where $Q_{g\tilde{r}t}$ and $Q_{g\tilde{r}t-1}$ represent the total quantities of commodity g produced in region $\tilde{r}$ at times t and $t-1$, B_{grt-1} is the demand-balancing term for commodity g in region r at time $t-1$, and D_{grt-1} represents total quantity of commodity g demanded in region r at time $t-1$. $P_{g\tilde{r}\boldsymbol{t}}$ and $P_{g\tilde{r}\boldsymbol{t}-1}$ are the profit-maximizing prices of commodity g in region r, produced in region $\tilde{r}$, at times t and $t-1$, and σ_g is the elasticity of substitution between individual varieties of commodity g. Derivation of the trade relationship can be found in Tanner (2005).

The estimated share of each transportation mode devoted to the shipment of each commodity will be estimated by:

$$\theta_{g\delta t} = \sum_{s=1}^{S}\left(\theta_{\delta s}\cdot\frac{\vartheta_{gst}q_{s}}{\sum_{i=1}^{I}\vartheta_{gst}q_{s}}\right) \quad (14)$$

Where S is the total number of industries, $\theta_{\delta s}$ is the budget share of sector s devoted to the purchase of transportation mode δ at time t (identified by the IO table for time t), q_s is the total national output of sector s at time t, and ϑ_{gst} is the share of sector s output that is commodity g at time t. This equation enables the model to estimate the budget share of commodity g that is devoted to transportation mode δ as being the average of each sector's budget share devoted to transportation mode δ, weighted by the sector's total share of the output of commodity g. Note that most commodities are produced almost entirely by a single sector, and hence the commodity share is determined almost entirely by the production function of that sector.

The distance variables $d_{\tilde{\delta}\tilde{r}\boldsymbol{t}}$, $d_{\delta\tilde{r}\boldsymbol{t}}$, $d_{\delta\tilde{r}\boldsymbol{t}-1}$, and $d_{\delta\tilde{r}\boldsymbol{t}-1}$ are normally approximated by some inclusive straight-line distance or time measure, such that:

$$d_{\tilde{\delta}\tilde{r}\boldsymbol{t}} = d_{\delta\tilde{r}\boldsymbol{t}} = d_{\tilde{\delta}\tilde{r}\boldsymbol{t}-1} = d_{\delta\tilde{r}\boldsymbol{t}-1} = d_{\tilde{\delta}\tilde{r}t} = d_{\delta\tilde{r}t} = d_{\tilde{\delta}\tilde{r}t-1} = d_{\delta\tilde{r}t-1} \quad (15)$$

However, rather than using an inclusive straight-line distance or time measure, this model applies a unique and comprehensive database of transportation impedance measures developed by the Oak Ridge National Laboratories from impedance information for 1997 (Southworth, 1997 and Southworth, Peterson and Chin, 1998). Based on the Oak Ridge impedance database, the impedance in this model can differ between two regions both with the mode and with the direction of travel, but in the currently supported analysis,

$$d_{\delta\tilde{r}\boldsymbol{t}} = d_{\delta\tilde{r}\boldsymbol{t}-1} \quad (16)$$

As additional years of transportation data become available, impedance measures could be expanded to change over time, as well as with the mode and with the direction of travel.

Under the current assumptions, we can substitute the delivered price equation into our gravity equation and perform some simple algebra to get:

$$\frac{Q_{g\tilde{r}t}}{Q_{g\tilde{r}t-1}} = \frac{\sum_{r=1}^{R} D_{grt}\cdot\left(B_{grt}\cdot\prod_{\delta=1}^{\Delta} d_{\delta\tilde{r}\boldsymbol{t}}{}^{\theta_{\delta g}}\right)^{-\sigma_g}}{\sum_{r=1}^{R} D_{grt-1}\left(B_{grt}\cdot\prod_{\delta=1}^{\Delta} d_{\delta\tilde{r}\boldsymbol{t}-1}{}^{\theta_{\delta g-1}}\right)^{-\sigma_g}} \quad (17)$$

At this point we have an equation where the only unknowns are the elasticity of substitution σ_g and the balancing factor B_{grt}. Estimates of σ_g are calculated for each commodity g, using non-linear least squares. The estimation is made using data for all 3,110 regions in the U.S. database for the years 1999-2001.

Once σ_g has converged, we have effectively estimated the elasticities of substitution for each commodity in the model, subject to our initial condition that $P_{g\tilde{r}t}$ and B_{grt} are 1. These EXW balancing factors $P_{g\tilde{r}t}$ and B_{grt} are solved iteratively (of necessity, since they enter into the trade flow calculations nonlinearly), and the iterative estimation of $P_{g\tilde{r}t}$ and B_{grt} is followed by a re-estimation of σ_g. The entire process is repeated until convergence is achieved.

While trade flows are calculated for every commodity in our conjoined IO/SAM framework, some restrictions and assumptions will be imposed upon the various entities

in the model to capture specific behavioral limitations. Specifically:

1. No local government commodity can be shipped across county lines. This, effectively, prevents the export of local government commodities across region borders, which means that local government is paid for entirely by those entities in the region. Because this model will use counties as regions, this amounts to an assumption that local government does not cross county borders, but is provided uniformly within any given county; this is certainly a simplifying abstraction from reality, to the extent that some local government entities cross county borders, while others may have a footprint that does not cover an entire county.

2. No state government commodity can be shipped across state borders. This has the same effect for state government as our first assumption did for local government – state government does not cross state borders, but may be transported within the state, though such shipments are subject to the explicitly estimated transportation cost for the commodity.

3. Land cannot be shipped across county borders. Recall that the land area in a region fixes the supply of the land commodities in the region. This means that any region has a fixed supply of land, and this will act as the fundamental dispersing force in the model, counteracting any tendency toward catastrophic agglomeration that might occur in the presence of transportation costs alone.

Creating CGE and Dynamic Adjustment Paths for the Model

Recall from equation (6) that, under our explicit transportation cost assumption, the profit-maximizing price in region r of commodity g, produced in region $\tilde{r}$, at time t becomes:

$$P_{g\tilde{r}\boldsymbol{r}} = P_{g\tilde{r}t} \cdot \prod_{\delta=1}^{\Delta} \gamma_{g\delta} d_{\delta\tilde{r}\boldsymbol{r}}{}^{\theta_{\delta g}} \tag{18}$$

The next task is to define the vector of EXW profit-maximizing prices for all commodities manufactured in region $\tilde{r}$ at time t:

$$P_{g\tilde{r}t} = \frac{\sigma_g}{\sigma_g - 1} \Omega_{g\tilde{r}t} \tag{19}$$

Where σ_g represents the elasticity of substitution between individual varieties of commodity g, and $\Omega_{g\tilde{r}t}$ is the marginal cost function for producing commodity g in region $\tilde{r}$ at time t.

By working within price space (rather than quantity space), as dictated by the isomorphic discovery of Robert-Nicoud (2004), the EXW marginal cost function Ω_{grt} is in turn given by:

$$\Omega_{grt} = \prod_{\tilde{g}=1}^{G-\Delta} \left(P_{\tilde{g}\boldsymbol{r}}\right)^{\theta_{\tilde{g}g}} \tag{20}$$

Where $G-\Delta$ is the number of non-transportation commodities, $P_{\tilde{g}\boldsymbol{r}}$ is the price index of commodity $\tilde{g}$, in region r, at time t, and $\theta_{\tilde{g}g}$ is the share of commodity $\tilde{g}$ used in production of commodity g at time t. This vastly simplifies the marginal cost functions used by others (e.g. Fan, Treyz & Treyz, 2000) in developing multi-sector NEG models.

The price index $P_{\tilde{g}\boldsymbol{r}}$ is given by:

$$P_{\tilde{g}\boldsymbol{r}} = \sum_{\tilde{r}=1}^{R} \left(\frac{T_{\tilde{g}\tilde{r}\boldsymbol{r}}}{\sum_{\tilde{r}=1}^{R} T_{\tilde{g}\tilde{r}\boldsymbol{r}}} P_{\tilde{g}\tilde{r}\boldsymbol{r}} \right) \cdot \frac{\sum_{r=1}^{R} D_{\tilde{g}\boldsymbol{r}}}{\sum_{\tilde{r}=1}^{R} Q_{\tilde{g}\tilde{r}t}} \tag{21}$$

Where R represents the total number of regions in the model. $T_{\tilde{g}\tilde{r}\boldsymbol{r}}$ is the total trade in commodity $\tilde{g}$, originating in region $\tilde{r}$ and sold to region r, at time t, and $P_{\tilde{g}\tilde{r}\boldsymbol{r}}$ is the profit-maximizing price in region r of commodity $\tilde{g}$, produced in region $\tilde{r}$, at time t. The ratio of total demand in all markets, $\sum_{r=1}^{R} D_{\tilde{g}\boldsymbol{r}}$ to total supply in all markets $\sum_{\tilde{r}=1}^{R} Q_{\tilde{g}\tilde{r}t}$, might seem superfluous. Remember that the national IO tables are balanced by design, and hence, this ratio should equal 1 and be irrelevant to the calculation – and indeed, for most commodities, this is the case. However, in the case of the state and

local government commodities and, critically, the land commodity, markets are not national in scope, and this ratio is likely not going to be 1.

To generate our dynamic new economic geography model of the economy, it is critical that we unwrap the concept of the EXW price of good g. Within a new economic geography framework, the EXW price can be decomposed as:

$$P_{grt} = \frac{\sum_{r=1}^{R} D_{grt}}{\sum_{r=1}^{R} Q_{grt}} \cdot \prod_{\tilde{g}=1}^{G-\Delta} \left(P_{\tilde{g}\tilde{r}t}\right)^{\vartheta_{\tilde{g}g}} \cdot A_{g} \tag{22}$$

That is, the EXW price P_{grt}, is equal to the demand to supply ratio of the commodity in the market times the production function weighted price index for all non-transportation intermediate inputs. The refinement that we must introduce at this point is the variable A_{g}, which is the first nature production cost of commodity g in region r, and is calibrated from the EXW price equation (19). The EXW price equation (19) is correct, only if there are no location-specific price differences in production for any region, except those originating from the price of intermediate inputs. However, in the real world, regions are intrinsically heterogeneous. For example, coal mining is intrinsically more profitable in Wyoming than in Delaware, not because market access is better in Wyoming than in Delaware, but because Wyoming is intrinsically different than Delaware – Wyoming has lots of rich coal deposits, and Delaware does not. Likewise, boat building will tend to be more profitable when there is a body of water in the region, agriculture will be more profitable for regions that have the appropriate soil, etc. In a completely homogenous world, there would be no such first nature differences, all A_{g} values would be expected to equal 1, and the only other force driving the location decision would be market access. But with our CGE behavioral equations, and with our trade flow calculations from the previous section, we can estimate a completely new economic geography model.

For each origin region $\tilde{r}$ and destination region r, for each good g, we calculate the delivered price equation (18) for the last history year using our calculated EXW price $P_{g\tilde{r}t}$ from equations (19) and (20). Once we have calculated the delivered price for all regions and commodities in the last history year, we can use equation (21) to calculate the price index for every commodity and region in the last history year. Finally, the EXW price for every commodity is decomposed into its respective elements, per equation (22), specifically to calibrate the first nature differences, A_{g}, for each good and region in the last history year. We shall assume that these first nature differences do not fluctuate over time.

Once these calculations are made, there is certainly no guarantee that profits of all industries, in all regions, will be equal. Given the monopolistic competition configuration of the model, any potential for profit will be realized in regions that can produce and deliver output at a low relative price within the various markets they serve. As such, given the behavioral equations outlined in the previous section, we can estimate an index of relative profitability for firms in sector i in region r at time t as:

$$\pi_{srt} = \sum_{\tilde{g}=1}^{G} \left(\vartheta_{\tilde{g}s} \cdot \sum_{r=1}^{R} \left(\frac{T_{\tilde{g}\tilde{r}r}}{\sum_{r=1}^{R} T_{\tilde{g}\tilde{r}r}} \cdot \frac{P_{\tilde{g}r}}{P_{\tilde{g}\tilde{r}r}} \right) \right) \tag{23}$$

Where π_{srt} is an index of relative profitability for sector s, in region r, at time t.

At this point, we must develop an output adjustment process for the CGE model in order to recognize that the adjustment to a stable, long run equilibrium is not an instantaneous process, but rather a series of myopic steps as each sector in each region makes adjustments, over time, in response to their profitability signals. An output adjustment process is estimated by

$$\frac{Q_{s\tilde{r}t+1}}{\sum_{\tilde{r}=1}^{R} Q_{s\tilde{r}t+1}} = \frac{Q_{s\tilde{r}t}}{\sum_{\tilde{r}=1}^{R} Q_{s\tilde{r}t}} + \lambda_{s} \cdot \left(\sum_{\tilde{g}=1}^{G} \left(\vartheta_{gst+1} \cdot \sum_{r=1}^{R} \left(T_{\tilde{g}\tilde{r}r} \cdot \frac{P_{\tilde{g}r}}{P_{\tilde{g}\tilde{r}r}} \right) \right) - 1 \right) \cdot \frac{Q_{s\tilde{r}t}}{\sum_{\tilde{r}=1}^{R} Q_{s\tilde{r}t}} \tag{24}$$

Where $Q_{s\tilde{r}t}$ and $Q_{s\tilde{r}t+1}$ are the quantity of output in sector s, in region $\tilde{r}$, at times t and $t+1$, respectively, and λ_{s} is the speed of adjustment of sector s to the relative profitability signal, and must be econometrically estimated.

Then, using our historical data, we can use equation (24) to calculate profitability response λ_{s} for each sector by least

squares, using:

$$\frac{Q_{srt+1}}{\sum_{\tilde{r}=1}^{R} Q_{s\tilde{r}t+1}} \Bigg/ \frac{Q_{srt}}{\sum_{\tilde{r}=1}^{R} Q_{s\tilde{r}t}} = 1 + \lambda_s(\pi_{srt} - 1) \qquad (25)$$

Based upon the calculated profitability π_{srt} and profitability response λ_s, we can then calculate the expected market shares for the first forecast year, and allocate supply and demand accordingly. Based upon the new allocation of supply and demand, and the estimated elasticity of substitution, we can calculate a complete and balanced set of trade flows for the first forecast year.

Then, we calculate the EXW price for each commodity, in each region, in the first forecast year, by using equation (20) and the value of $P_{\tilde{g}\tilde{r}t-1}$ as an estimate of $P_{\tilde{g}\tilde{r}t}$. Using the EXW price we have just calculated, we use equation (19) to calculate the delivered price $P_{g\tilde{r}\tilde{r}t}$ for every good g, and for every origin region $\tilde{r}$, and destination region r.

Using this estimate of delivered price, we calculate the price index for each good g, and region r, in the first forecast year using equation (22). Once all price indices have been updated, we can recalculate the complete menu of EXW prices, to recalculate a complete set of delivered prices, then recalculate all price indices. This process is repeated until it converges completely. Because each iteration is capturing prices across a greater number of regions, the process necessarily converges very quickly.

With the delivered price and price index data for all regions and goods for the first forecast year, we can calculate sector i profitability for all industries in all regions, using equation (23). Based upon the calculated profitability π_{srt} and profitability response λ_s, we calculate the expected market shares for the second forecast year, and allocate supply and demand accordingly. The whole process is then repeated for each and every year of the forecast period, to build a complete county level CGE model of the United States Economy that is consistent with the new economic geography framework.

Characteristics and Behavior of the Model

Because of the switch from the SIC (Standard Industrial Classification) to NAICS (North American Industrial Classification System) system for coding industries and commodities that took place over the 1997-2000 time frame, and because the U.S. Bureau of Economic Analysis chose not to collect data in both formats for a single overlapping year, there exists no technique that will generate even a remotely useful county level time series that overlaps the two coding systems (Tanner & Hearn, 2005). Because the model we have developed ultimately is to be applied to regional planning activity, it has been built entirely in NAICS, which means that the data series cannot be extended before 1999. As such, the model is constructed using a complete historical database that covers only the years 1999-2001. The major shortcoming of this arrangement is that the model's forecasting capability cannot yet be tested against historical data; the estimation of trade flows in chapter 2 requires two years of historical data, and that leaves a measly one year of historical data that could be used to test the model. This is clearly insufficient to test a structural model. So, we are left to explore characteristics of the model forecast, while having to rely upon the integrity of the model logic, as opposed to its historical performance.

Because the model forecasts an enormous number of concepts, identifying data that will capture the overarching concepts of the New Economic Geography framework is a challenge. The challenge is intensified by the fact that the model forecasts the market share accruing to each county in every market, and hence, the U.S. aggregate forecast tells us nothing about the nature of the regional model. Because the NEG model is fundamentally driven by market shares and the amount of land available, it seems the single metric that best captures the model behavior is "relative total sector output per acre." That is, the total amount of output per acre in a county, relative to the total amount of output per acre in the United States. By this metric, a county with a relative total sector output per acre of 1, is producing exactly as much per acre as the U.S. as a whole. A county with a metric greater than 1 is, to some degree, a core county (a county that has experienced economic agglomeration), and a county with a metric smaller than one is, to some degree, a periphery county (a county that has experienced economic dispersion). If the metric for a county is increasing over time, this would reflect a county that is experiencing economic agglomeration, and if the metric is decreasing over time, this would reflect a county dominated by dispersion forces, the key features of the new economic geography literature.

To provide a frame of reference, in 2002 the "most peripheral" county in the United States was the Yukon-Koyukuk Census Area in Alaska. With a relative output per acre measure of 0.00031, this region had an "economic density" that was .031% of the national average. By this same metric, the five "most peripheral" counties in the United States in 2001 were: Yukon-Koyukuk Census Area, Alaska, Lake and Peninsula Borough, Alaska, Loving County, Texas, Petroleum County, Montana, and Yakutat City and Borough, Alaska.

At the other extreme, the most economically dense (or "most core") county in the United States was New York County, New York, with a relative economic density of 5803.38, meaning that output per acre in New York County is over 5800 times the national average output per acre. The top five "most core" counties in the United States in 2001 were: New York County, New York, San Francisco County, California, Suffolk County, Massachusetts, the District of Columbia, and Arlington, Virginia.

Under this measure of economic density, using what we know of the new economic geography structure of the model, we can begin to picture how various counties might be forecast to behave within this structure. We would expect that periphery regions like Yukon-Koyukuk, are likely to be very stable periphery counties, and that they are likely to see little change in their economic density over time. Likewise, we might expect the "most core" regions, like New York County, will be relatively stable in their market share. Between these two extremes, we have an array of regions that might, over the forecast period, be moving toward "greater coreness" or "greater peripheriness" if they are near their so-called "break point" (the point where the benefits of economic agglomeration outweigh the costs, and economic agglomeration/ dispersion occurs). And we might have yet another group of midsize regions that are losing there "coreness" or "peripheriness" as they pass the sustain point for their particular equilibrium. If we look at the behavior of these counties in the aggregate, we expect to see a number of counties that are stable within their core, periphery, or dispersed equilibrium, and some counties that, across the forecast period, will be making the transition from core or periphery. We have compared our forecast to two alternative, naïve forecasts, and we see a result that is largely as expected. The first alternative forecast assumes the county share of U.S. output to remain constant throughout the forecast period, and a second assumes that the county share of U.S. output will grow at the average annual rate exhibited in the 1999-2001 historical period. Both of these forecasts would be expected to correspond well with the counties that do not approach a break or sustain point. The constant growth forecast is expected to perform comparatively well over the short term with counties that are in transition, but will likely perform very poorly as those counties approach their new core or periphery position. The constant share forecast will not accurately reflect the counties while they are in transition, but will not be wildly incorrect over time, as those counties approach their new equilibrium and settle into a more-or-less fixed output share. By examination of the correlation coefficients over the forecast period between our model, the constant shares model, and the constant growth model, we see results consistent with our intuition (see Figure B3, this page) For the first fifteen to twenty years of the forecast period, the forecasts of county level relative output per acre are very tightly correlated among the three forecast types. The correlation of the model forecast with the constant share forecast then begins to drop off, and by the close of the forecast period, the correlation between the constant growth forecast and the NEG model forecast is virtually zero. This is consistent with the idea that counties that are experiencing share growth are in transition, and not exhibiting a permanent relative growth behavior as suggested by the naïve model.

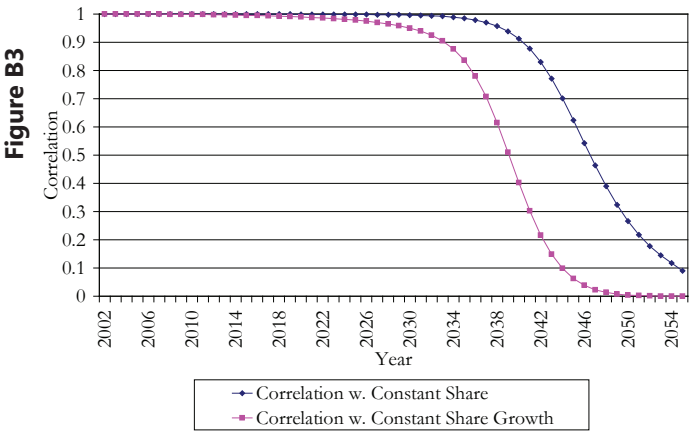


Figure B3: Correlation of the NEG model with the constant output share and constant output growth models.

The constant share forecast is much more tightly correlated with the NEG model forecast, for a much longer period of time. By the close of the forecast period, there is still

approximately 9% correlation between the constant shares forecast and the NEG model forecast. Once again, this is consistent with our intuition regarding market behavior in an NEG format.

We can capture this behavior in another way, by looking at the behavior of our chosen metric, relative output per acre, within deciles. With a total of 3,110 counties, each year we divide these counties into ten groups of 311, based upon their relative output per acre. The 311 counties in the smallest decile are, in a sense, the "most peripheral," and the 311 in the largest decile are the "most core." Because our metric is a county aggregate, it necessarily abstracts from the more in depth model behavior, since every sector, in every county, can have any degree of "coreness" or "peripheriness." Nonetheless, if we expect that movement toward core and periphery solutions fundamentally drive the economy, we can expect some specific behaviors to appear in the data. In an economy moving toward increasing heterogeneity, we would expect the average growth rate in the very smallest regions to be either constant (if they are as peripheral as they can get) or shrinking, and the growth rate of the very largest regions to be, in general, either constant (if they have reached a point of maximum "coreness") or growing. Somewhere in the middle of the distribution, we might expect to see counties that are in transition to a core position, or perhaps to a periphery position. A look at the growth rates by decile in Table B1 (this page) reveals some interesting patterns. First, the relative output of the smallest 311 counties is shrinking, and is shrinking slightly faster than it is for any other decile. Deciles 2 through 6 are shrinking slightly as well, though each successive decile is shrinking slightly less. The 622 regions in deciles 8 and 9 are actually growing in share of U.S. output, suggesting that they are moving toward becoming cores. The largest 311 regions, however, are exhibiting almost no growth in share of U.S. output, suggesting that the most core U.S. counties simply cannot get any more "core" than they already are. These counties are likely running into the model barrier created by land prices, which simply precludes further agglomeration.

Table B1

Decile	Average Growth Rate	Decile	Average Growth Rate
Smallest	0.9814	6	0.9990
2	0.9883	7	0.9995
3	0.9913	8	1.0045
4	0.9923	9	1.0074
5	0.9950	Largest	1.0002

Table B1: County relative growth in share of US output, by decile, 2002-2055.

Agglomeration from a Homogeneous Economy

At this point, we have evidence that the model will maintain core/periphery economies when presented with a heterogeneous economy as a starting point; in this case, we started the model with our clearly heterogeneous 2001 economy, and allowed the model to go from there. However, it is interesting to test whether the model can develop a heterogeneous economy from a completely homogeneous starting point, and what characteristics this artificial economy might have. To that end, the forecasting model was adjusted in a few fundamental ways. First, the input-output matrix, which evolves over time in the forecasting model, is "locked down" as the 2001 input-output matrix, which means that changes in production technology will not take place, so the economy is evolving toward some fixed equilibrium, rather than an equilibrium that is, itself, changing due to input-output changes. Secondly, the total US output for every sector in the model was spread evenly across every county, in proportion to each county's share of total U.S. land area. So, a county that represents .1% of U.S. land area also was assigned .1% of total U.S. output of every sector. Thus, the model was starting from a truly dispersed "backyard capitalism" scenario.

With this starting point, a total of five alternative model specifications were built. In the first model specification, first difference values were set to 1 for all goods in all regions. That is, the model assumed that there were no first nature differences for any production activity in any region (so, coal mines, for example, could be located anywhere). Second, all impedance values, for all modes, for every region-region combination were set to 1. This means that there was also no transportation related advantage for any region in the model; any region would produce their output and sell it in every region (including there own) for the same price. All other characteristics of the model were left unchanged. This model was then allowed to run through 54 simulated years. It should come as absolutely no surprise that, under these restrictions, no agglomeration whatsoever takes place. The economy at the end of the

54 cycles remains completely homogeneous for the simple reason that, with no first nature price differences and no potential for second nature differences, there is no force to encourage any movement from the dispersed equilibrium.

For the second scenario, we reintroduce the first difference values, that were calculated for the model, but we continued to allow all goods to be shipped from any region, to any region, for the same price. This model effectively allows for first nature differences, but removes all second nature differences. When this model was allowed to cycle through 54 years, the result was spectacular agglomeration; agglomeration that is much greater than that actually seen in the U.S. economy in 2001 (as measured by the standard deviation in county output per acre). The reason for the spectacular level of agglomeration is simply that, with transportation costs not entering into the picture, all economic activity is strongly attracted to the places with the greatest first nature advantage in production. Many activities that we intuitively know are significantly constrained by transportation (restaurants, gas stations, grocery stores) will, nonetheless, cluster in a relatively small number of counties, even if the first nature price advantage is small, simply because the transportation effect has been removed.

The next incarnation of the model again removed the first nature differences, but this time the impedance values for every mode of transportation was set to equal the straight line distance between county centroids. Internal distances for every region were set equal to the square root of the region's land area. Under this configuration, we are removing any first nature differences among regions, and allowing second nature differences, but those second nature differences use the simplifying assumption that transportation costs are simply proportional to straight line distance. When this model is allowed to continue for 54 years, it generates economic agglomerations, though the agglomerations are much more modest than those created by the first nature difference model. The agglomeration is, of course, generated strictly through the second nature differences in this model.

The next incarnation of the model was very similar, except that the straight line distances were replaced with the Oak Ridge impedance data. Therefore, this model included all transportation infrastructure data for second nature differences, but still included no information about first nature differences. Not surprisingly, this model also generated economic agglomeration over the forecast period; the agglomeration was somewhat more pronounced then that generated by the straight line distance model, but still much less than the agglomeration generated by the first nature differences themselves. The agglomeration in this model is greater than that of the straight line distance model, simply because the transportation data is much more heterogeneous than the straight line distances. Two adjacent counties will face almost the same menu of straight line distances, and will, therefore, be almost equally preferable if that is the metric used for transportation costs. However, when a major highway, a rail line, and a port are located in one county and not the other, the difference between the two, from a profitability standpoint, becomes quite dramatic.

The final incarnation of the model included all of the transportation infrastructure data, and all of the first nature difference data. This version was simply the full model, but run on an initially homogenous distribution and with a constant IO table. This model exhibited somewhat more agglomeration than the model with transportation, but not first order differences. However, the model still showed much less agglomeration than the model of first nature differences alone.

The purpose of this experiment was not simply to look at the models compared to one another, but also to look at how the models might compare to the actual 2001 U.S. economy. We know that history matters, and that there are a near infinite number of potential equilibria in an NEG mode with this many regions and sectors. However, it seems reasonable that given the distribution of first nature differences, and given our heterogeneously distributed transportation infrastructure, we might gravitate to a similar spatial distribution of economic activity, even from very different starting points. In this case, we are taking our starting point of a homogeneous economy, with a fixed 2001 technology, and letting each of our alternative model specifications run for 54 years, to see how the resulting economy compares to the actual U.S. economy in 2001 (which obviously started from a very different starting point). Once again, we use our metric of relative output per acre for each county, and will see whether any of our model configurations are correlated with the actual 2001 economy. The summary results are reported in Table B2 (page 121).

Table B2

Forecast Method:	Correlation with 2001 Output per County:
No First Nature Difference	NA
First Nature Effect Only	.0593
Distance Effect Only	.1314
Transportation Effect Only	.5727
Transportation and First Nature Effects	.6502

Table B2: The degree of correlation between the distribution of economic activity in the U.S. in 2001 and the distribution of economic activity 54 years removed from a homogeneous distribution, for various model configurations.

The model with no first or second nature differences, of course, exhibits no heterogeneity at the end of 54 years, so there is no correlation to discuss. The model with first nature differences, but no transportation had a very high degree of agglomeration, but the agglomeration is only minimally correlated with the agglomeration in the actual economy. While the first nature model might perform very well for some industries, such as mining, which are clearly driven by location specific cost factors, it tells us little about industries that are more affected by market access, rather than by first nature differences.

The models that capture transportation (and hence shipping cost) are each much more strongly correlated with the actual U.S. 2001 data. The model that imbeds impedance data (but without first nature differences) generates a correlation of over 57%. Finally, the full model, with first nature differences and transportation infrastructure, manages to endogenously generate a heterogeneous economy that is over 65% correlated with the 2001 U.S. economy. These correlations are surprisingly high, and are no doubt driven largely by the fact that transportation generates economic agglomeration, which drives economic development, so the model is capturing the correlation between level of infrastructure and the size of the economy. In this way, the model is generating results very similar to Sutton, Roberts, Elvidge, and Meij (1997). They tested the simple correlation between the light levels from nighttime satellite photos of the United States, and the county level income data for the United States. Their analysis found a correlation of 84% to 93%, which is in line with the numbers found in this analysis.

While the exercise of building these alternative models has no immediate practical application, it is certainly reassuring to note the model's ability to spontaneously agglomerate a homogeneous economy in a manner consistent with NEG theory. In examining the degree of correlation between the model and the 2001 data, it also suggests a certain degree of inevitability in the specific pattern of heterogeneity observed in the U.S. economy.

While we do not yet have a sufficient historical record against which to test the model, these results can at least reassure us that the model is behaving as we would expect, given the theory.

Conclusions

In this paper, we have integrated concepts, theories, and data from a number of different areas into a comprehensive regional economic modeling methodology consistent with the theoretical New Economic Geography literature. The case for using this approach to develop a computable general equilibrium model appears compelling, and on that basis we believe the model takes several important steps forward in the field of applied regional economic modeling, forecasting, and impact analysis. While the model development effort has been significant, what has been built to this point only scratches the surface of what might be possible, as additional data, computing power, and theoretical work enable making increasingly simple models that can capture increasingly complex behaviors in an increasingly accurate manner.

References

Alonso, William. 1973. "National Interregional Demographic Accounts: A Prototype," Institute of Urban and Regional Development Monograph 17, http://www-iurd.ced.berkeley.edu/.

Batten, David and David Boyce. 1986. "Spatial Interaction, Transportation, and Interregional Commodity Flow Models," in *Handbook of Regional and Urban Economics*. Peter Nijkamp, Edwin Mills, P. C. Cheshire eds. Amsterdam: North-Holland, pp. 357-406.

Beaumont, Paul. 1990. "Supply and Demand Interaction in Integrated Econometric and Input-Output Models." *International Regional Science Review*, 13:2, pp. 167-81.

Bröcker, Johannes. 1990. "Derivatives of Flows in a Doubly Constrained Gravity Model." *Journal of Regional Science*, 30:2, pp. 259-268.

Ciccone, Antonio and Robert E. Hall. 1996. "Productivity and the Density of Economic Activity." *American Economic Review*, 86:1, pp. 54-70.

Dixit, Avinash K. and Joseph E. Stiglitz. 1977. "Monopolistic Competition and Optimum Product Diversity," *American Economic Review*, 67:3, pp. 297-308.

Fan, Wei, Frederick Treyz and George Treyz. 2000. "An Evolutionary New Economic Geography Model." *Journal of Regional Science*, 40:4, pp. 671-695.

Fotheringham, A. Stewart. and Morton O'Kelly. 1989. *Spatial Interaction Models: Formulations and Applications*. Dordrecht: Kluwer.

Fujita, Masahisa, Paul R. Krugman and Anthony Venables. 1999. *The Spatial Economy*. Cambridge, MA: MIT Press.

Hewings, Geoffery, Michael Sonis and David Boyce, Eds. 2002. *Trade, Networks and Hierarchies: Modeling Regional and Interregional Economies*. Berlin: Springer.

Jensen, Rodney. 1990. "Construction and Use of Regional Input-Output Models: Progress and Prospects." *International Regional Science Review*, 13:1, pp. 9-25.

Krugman, Paul R. 1980. "Scale Economies, Product Differentiation and the Pattern of Trade." *American Economic Review*, 70, pp. 950-9.

Krugman, Paul R. 1991. "Increasing Returns and Economic Geography." *Journal of Political Economy*, 99:3, pp. 483-99.

Krugman, Paul R. 1998. "Space: The Final Frontier." *Journal of Economic Perspectives*, 12:2, pp. 161-74.

Leontief, Wassily. 1941. *The Structure of the American Economy, 1919-1939*. New York: Oxford University Press.

Neary, J. Peter. 2001. "Of Hype and Hyperbolas: Introducing the New Economic Geography." *Journal of Economic Literature*, 39:2, pp. 536-561.

Pyatt, Graham and Jeffery Round. 1985. *Social Accounting Matrices: A Basis for Planning*. Washington, DC: The World Bank.

Robert-Nicoud, Frederic. 2004. "The Structure of Simple 'New Economic Geography' Models (or, On Identical Twins)." *Journal of Economic Geography*, 4, pp. 1–34.

Round, Jeffrey I. 2003. "Constructing SAMs for Development Policy Analysis: Lessons learned and Challenges Ahead." *Economic Systems Research*, 15:2, pp. 161-183.

Southworth, Frank. 1997. *Development of Data and Analysis Tools in Support of a National Intermodal Network Analysis Capability*. Washington, DC: US Department of Transportation Bureau of Transportation Statistics.

Southworth, Frank. 1998. Bruce E. Peterson and Shih-Miao Chin. 1998. *Methodology for Estimating Freight Shipment Distances for the 1997 Commodity Flow Survey*. Washington, DC: US Department of Transportation Bureau of Transportation Statistics.

Stone, Richard and Alan Brown. 1962. *A Programme for Growth, vol.1: A Computable Model of Economic Growth*. London: Chapman and Hall.

Tanner, Thomas. 2005. "Applications of New Economic Geography in Regional Economic Analysis and Forecasting." University of Georgia Dissertation.

Tanner, Thomas C. and Will Hearn. 2005. "Economic Impact Analysis," in *The Regional Economic Development Handbook*. Robert Pittman, ed. Washington, DC: International Economic Development Council, pp. 132-165.

Treyz, George Dan Rickman and Gang Shao. 1992. "The REMI Economic-Demographic Forecasting and Simulation Model." *International Regional Science Review*, 14:3, pp. 221-253.

Wilson, Alan. 1970. *Entropy in Urban and Regional Modeling*. London: Pion.

Wilson, Alan. 1974. Urban and Regional Models in Geography and Planning. Chichester: John Wiley.

Appendix C

Detailed Data: Website for Documents and Data, http://mssny.redyn.com

A companion website has been prepared for this study, and is available at http://mssny.redyn.com. Features available on this website include:

- Electronic copies of all documents created for the study
- A tool to drill down into the detail data underlying study results
- Contacts for further information about the study

Appendix D

Detailed Data: Economic Impact Contributions of Private Practice Physicians within Selected Counties of the State of New York

Tri-fold brochures have been prepared detailing the economic impact contributions of Private Practice Physicians within each county of the State of New York. Included in this appendix are example copies of the brochures for each county which contributes more than one percent (1%) of the total statewide economic impacts of Private Practice Physicians. These example copies are presented at 88 percent normal size, and are included in order of total economic impacts contributions from largest to smallest. Full-size brochures for each county of the State of New York are available as noted in Appendix C (page 124).

These brochures contain a broad summary of the economic impact contributions of Private Practice Physicians in each county of the State on New York. Included in the summary are:

- Details regarding the ranking of the Offices of Physicians industry as compared to other industries within the county, as well as compared to Offices of Physicians in other counties of the State of New York
- A table summarizing the county and remainder of state contributions to each of the five core concepts presented in this study for years 2008, 2012, 2016, and 2020
- A figure displaying the total employment contribution for years 2008, 2012, 2016, and 2020
- A figure displaying the total personal income contribution for years 2008, 2012, 2016, and 2020
- A figure displaying the total corporate sales contribution for years 2008, 2012, 2016, and 2020
- A figure displaying the NY state tax revenue contribution for years 2008, 2012, 2016, and 2020
- A figure displaying the NY local tax revenue contribution for years 2008, 2012, 2016, and 2020
- A figure displaying the economic value per dollar of Private Practice Medical care within the county, as well as the NY state tax revenue and NY local tax revenue collected per dollar of Private Practice Medical care within the county
- A map displaying the relative distribution of economic impacts to each county of the State of New York during 2008

The 17 counties included here as examples accounted for 89.46 percent of the total corporate sales generated by Offices of Physicians in the State of New York during 2008.

The percentage contribution to total corporate sales in the State of New York during 2008 for each example county are listed in Table D1 (this page).

Table D1

County Name	Percent Corporate Sales
New York County	17.35
Nassau County	12.44
Suffolk County	7.86
Westchester County	7.68
Kings County	7.15
Queens County	5.99
Erie County	5.93
Onondaga County	4.36
Bronx County	3.46
Monroe County	3.41
Albany County	3.27
Richmond County	2.38
Rockland County	1.93
Dutchess County	1.75
Orange County	1.70
Oneida County	1.45
Broome County	1.36
Remainder of New York	10.54

Table D1: Percent State of New York Corporate Sales During 2008, by County. The percentage contribution to total State of New York corporate sales generated during 2008 by the Offices of Physicians in each example county included in this appendix.

Private Practice Physicians play an increasingly important role in New York County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the New York County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, New York County ranked first among all counties in the State of New York in terms of the size of this industry. Within New York County during 2008, as compared to other industries, Offices of Physicians ranked:

- 6th in business establishments
- 25th in employment
- 23rd in personal income
- 42rd in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of an industry
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- **Induced effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by employees of an industry in the process of utilizing their personal income

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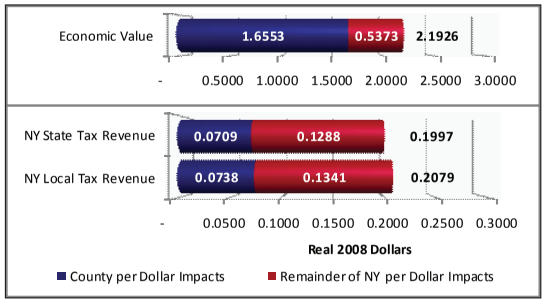

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in New York County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in New York County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
- total personal income created - **Figure 2**
- total corporate sales generated - **Figure 3**
- New York state tax revenue - **Figure 4**
- New York local tax revenue - **Figure 5**

All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in New York county during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in New York county on all counties in the State of New York are displayed in **Map 1**.

The Medical Society of the State of New York (MSSNY) represents the interests of patients and physicians in an ongoing effort to assure quality health care services for all New Yorkers. It is the largest and oldest organization of licensed physicians, medical residents, and medical students in the State of New York. Members participate in both the state society and in their local county medical societies.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in New York County, NY

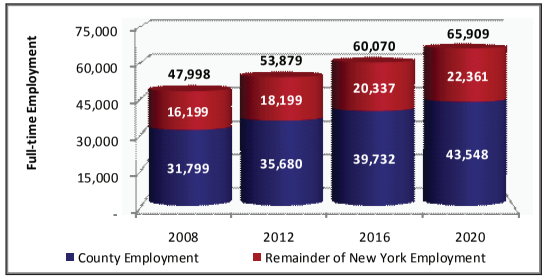

Figure 1: Total Employment supported by Offices of Physicians in New York County, in full-time equivalents.

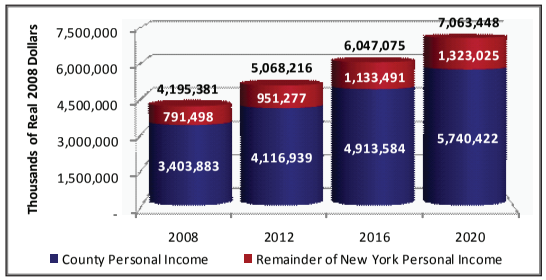

Figure 2: Total Personal Income supported by Offices of Physicians in New York County, in thousands of real 2008 dollars.

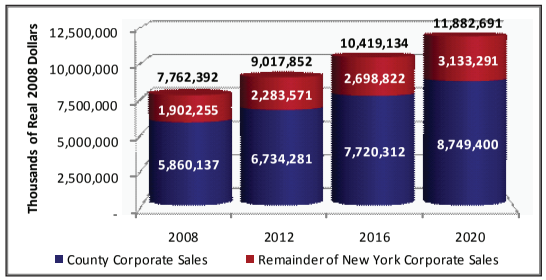

Figure 3: Total Corporate Sales supported by Offices of Physicians in New York County, in thousands of real 2008 dollars.

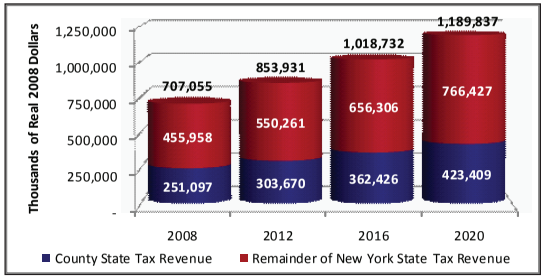

Figure 4: NY State Tax Revenue supported by Offices of Physicians in New York County, in thousands of real 2008 dollars.

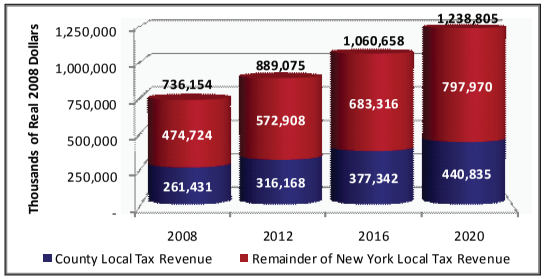

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in New York County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in New York County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	31,799	16,199	35,680	18,199	39,732	20,337	43,548	22,361
Total Personal Income	3,403,883	791,498	4,116,939	951,277	4,913,584	1,133,491	5,740,422	1,323,025
Total Corporate Sales	5,860,137	1,902,255	6,734,281	2,283,571	7,720,312	2,698,822	8,749,400	3,133,291
NY State Tax Revenue	251,097	455,958	303,670	550,261	362,426	656,306	423,409	766,427
NY Local Tax Revenue	261,431	474,724	316,168	572,908	377,342	683,316	440,835	797,970

Table 1: Economic Impacts that result from the activity of Offices of Physicians in New York County. Impacts within New York County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Nassau County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Nassau County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Nassau County ranked second among all counties in the State of New York in terms of the size of this industry. Within Nassau County during 2008, as compared to other industries, Offices of Physicians ranked:

- 1st in business establishments
- 2nd in employment
- 2nd in personal income
- 4th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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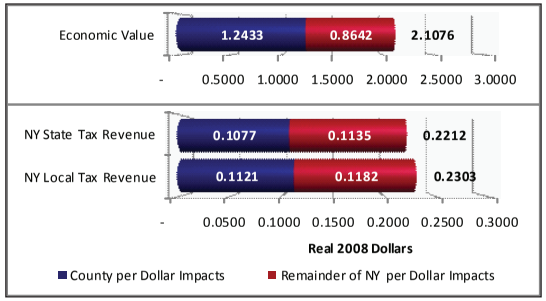

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Nassau County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Nassau County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
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All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Nassau County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Nassau County on all counties in the State of New York are displayed in **Map 1**.

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MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in Nassau County, NY

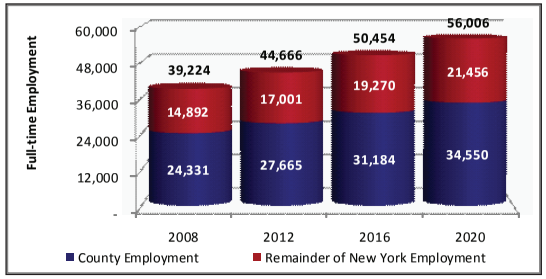

Figure 1: Total Employment supported by Offices of Physicians in Nassau County, in full-time equivalents.

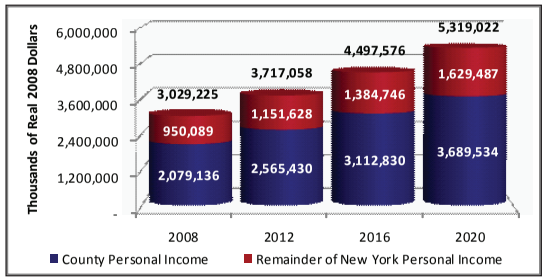

Figure 2: Total Personal Income supported by Offices of Physicians in Nassau County, in thousands of real 2008 dollars.

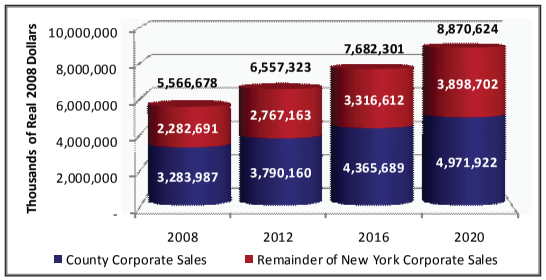

Figure 3: Total Corporate Sales supported by Offices of Physicians in Nassau County, in thousands of real 2008 dollars.

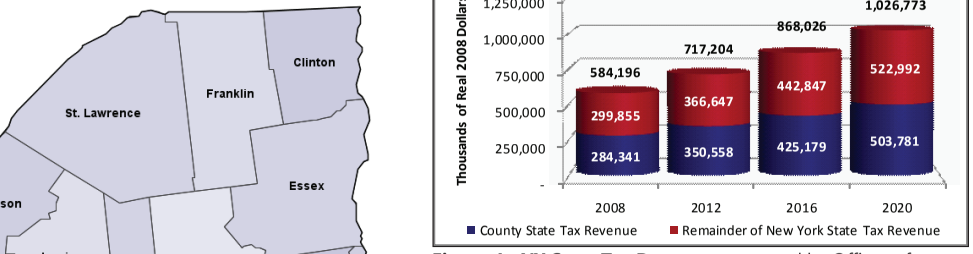

Figure 4: NY State Tax Revenue supported by Offices of Physicians in Nassau County, in thousands of real 2008 dollars.

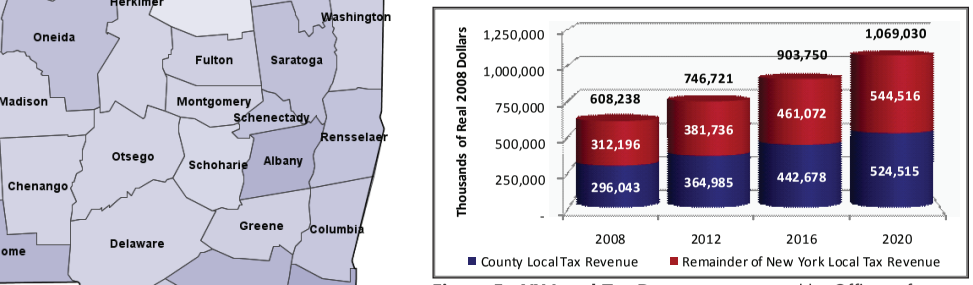

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Nassau County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Nassau County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	24,331	14,892	27,665	17,001	31,184	19,270	34,550	21,456
Total Personal Income	2,079,136	950,089	2,565,430	1,151,628	3,112,830	1,384,746	3,689,534	1,629,487
Total Corporate Sales	3,283,987	2,282,691	3,790,160	2,767,163	4,365,689	3,316,612	4,971,922	3,898,702
NY State Tax Revenue	284,341	299,855	350,558	366,647	425,179	442,847	503,781	522,992
NY Local Tax Revenue	296,043	312,196	364,985	381,736	442,678	461,072	524,515	544,516

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Nassau County. Impacts within Nassau County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Suffolk County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Suffolk County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Suffolk County ranked third among all counties in the State of New York in terms of the size of this industry. Within Suffolk County during 2008, as compared to other industries, Offices of Physicians ranked:

- 2nd in business establishments
- 4th in employment
- 3rd in personal income
- 10th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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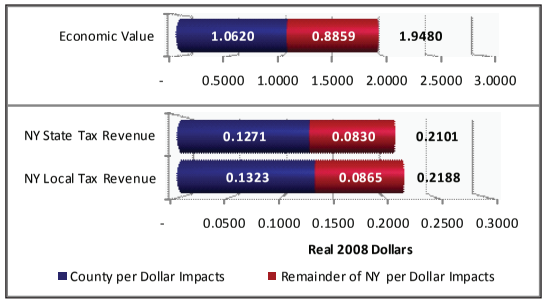

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Suffolk County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Suffolk County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

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All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Suffolk County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Suffolk County on all counties in the State of New York are displayed in **Map 1**.

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Economic Impacts of Private Practice Physicians in Suffolk County, NY

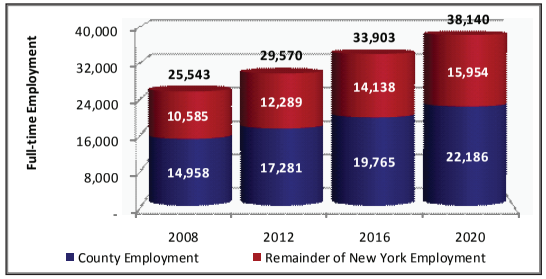

Figure 1: Total Employment supported by Offices of Physicians in Suffolk County, in full-time equivalents.

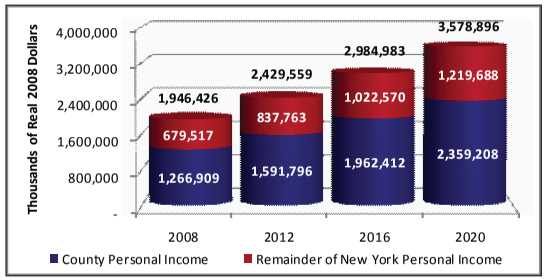

Figure 2: Total Personal Income supported by Offices of Physicians in Suffolk County, in thousands of real 2008 dollars.

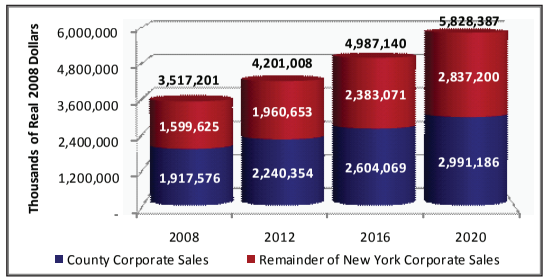

Figure 3: Total Corporate Sales supported by Offices of Physicians in Suffolk County, in thousands of real 2008 dollars.

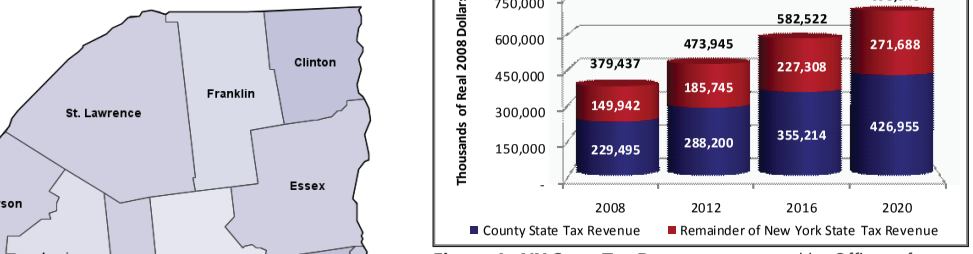

Figure 4: NY State Tax Revenue supported by Offices of Physicians in Suffolk County, in thousands of real 2008 dollars.

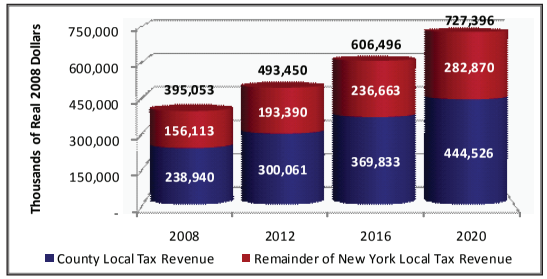

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Suffolk County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Suffolk County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

Impact Concept	2008		2012		2016		2020	
	County	Rest of NY	County	Rest of NY	County	Rest of NY	County	Rest of NY
Total Employment	14,958	10,585	17,281	12,289	19,765	14,138	22,186	15,954
Total Personal Income	1,266,909	679,517	1,591,796	837,763	1,962,412	1,022,570	2,359,208	1,219,688
Total Corporate Sales	1,917,576	1,599,625	2,240,354	1,960,653	2,604,069	2,383,071	2,991,186	2,837,200
NY State Tax Revenue	229,495	149,942	288,200	185,745	355,214	227,308	426,955	271,688
NY Local Tax Revenue	238,940	156,113	300,061	193,390	369,833	236,663	444,526	282,870

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Suffolk County. Impacts within Suffolk County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Westchester County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Westchester County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Westchester County ranked fourth among all counties in the State of New York in terms of the size of this industry. Within Westchester County during 2008, as compared to other industries, Offices of Physicians ranked:

- 2nd in business establishments
- 5th in employment
- 3rd in personal income
- 7th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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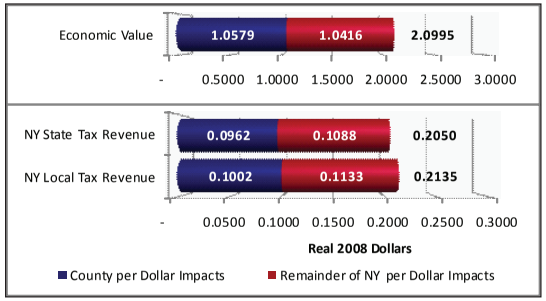

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Westchester County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Westchester County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
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- New York state tax revenue - **Figure 4**
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All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Westchester County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Westchester County on all counties in the State of New York are displayed in **Map 1**.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in Westchester County, NY

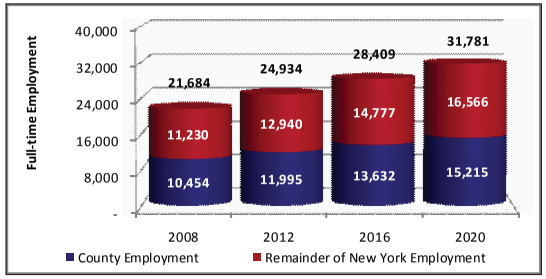

Figure 1: Total Employment supported by Offices of Physicians in Westchester County, in full-time equivalents.

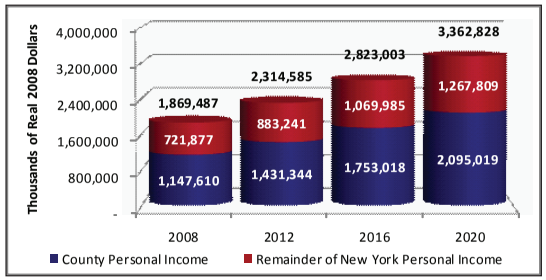

Figure 2: Total Personal Income supported by Offices of Physicians in Westchester County, in thousands of real 2008 dollars.

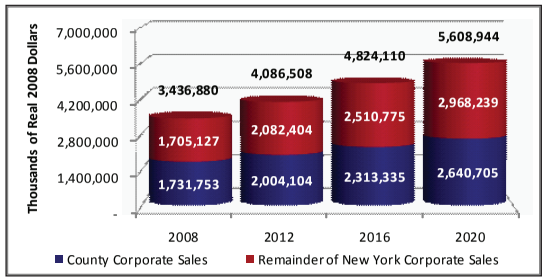

Figure 3: Total Corporate Sales supported by Offices of Physicians in Westchester County, in thousands of real 2008 dollars.

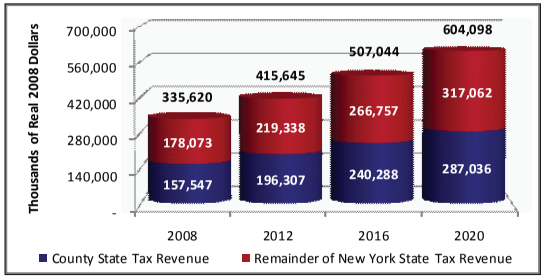

Figure 4: NY State Tax Revenue supported by Offices of Physicians in Westchester County, in thousands of real 2008 dollars.

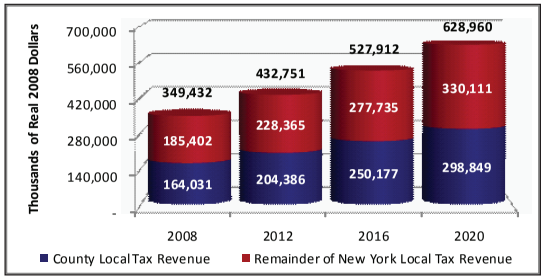

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Westchester County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Westchester County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	10,454	11,230	11,995	12,940	13,632	14,777	15,215	16,566
Total Personal Income	1,147,610	721,877	1,431,344	883,241	1,753,018	1,069,985	2,095,019	1,267,809
Total Corporate Sales	1,731,753	1,705,127	2,004,104	2,082,404	2,313,335	2,510,775	2,640,705	2,968,239
NY State Tax Revenue	157,547	178,073	196,307	219,338	240,288	266,757	287,036	317,062
NY Local Tax Revenue	164,031	185,402	204,386	228,365	250,177	277,735	298,849	330,111

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Westchester County. Impacts within Westchester County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Kings County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Kings County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Kings County ranked fifth among all counties in the State of New York in terms of the size of this industry. Within Kings County during 2008, as compared to other industries, Offices of Physicians ranked:

- 2nd in business establishments
- 7th in employment
- 3rd in personal income
- 7th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of an industry
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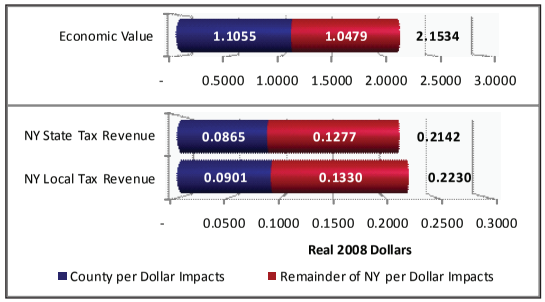

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Kings County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Kings County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
- total personal income created - **Figure 2**
- total corporate sales generated - **Figure 3**
- New York state tax revenue - **Figure 4**
- New York local tax revenue - **Figure 5**

All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Kings County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Kings County on all counties in the State of New York are displayed in **Map 1**.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

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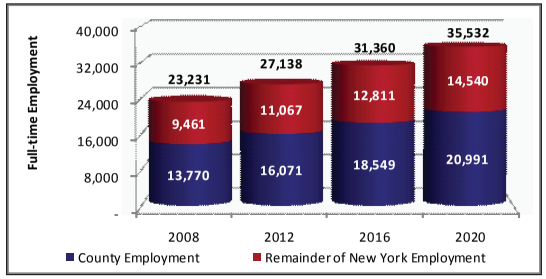

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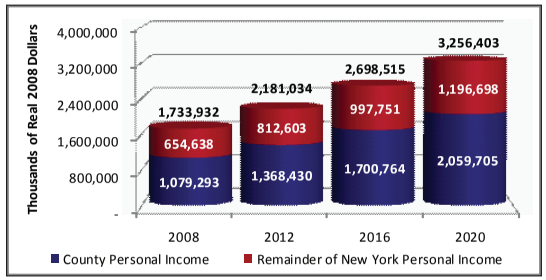
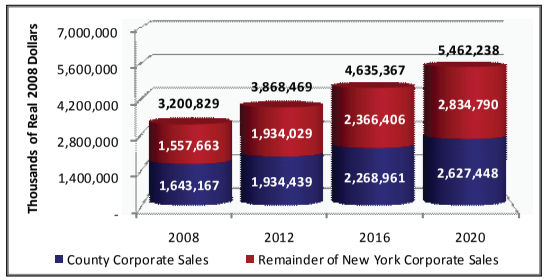


Figure 2: Total Personal Income supported by Offices of Physicians in Kings County, in thousands of real 2008 dollars.



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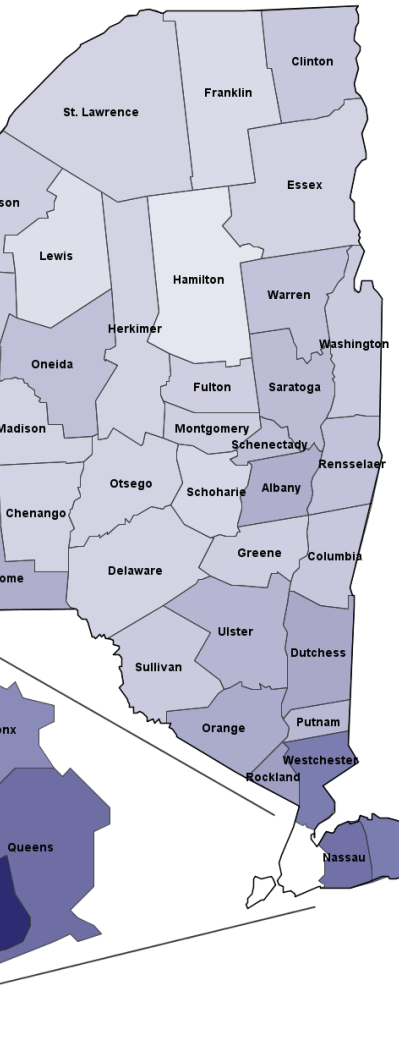
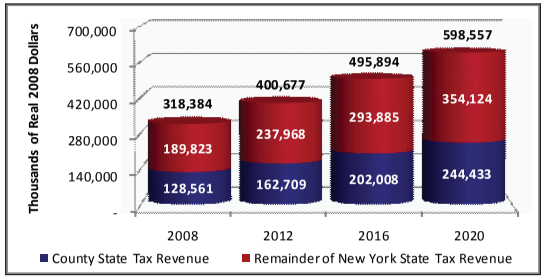


Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Kings County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.



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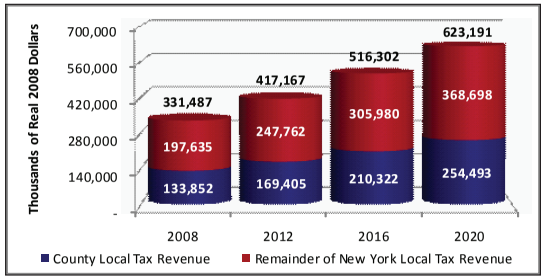

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Kings County, in thousands of real 2008 dollars.

Impact Concept	2008		2012		2016		2020	
	County	Rest of NY	County	Rest of NY	County	Rest of NY	County	Rest of NY
Total Employment	13,770	9,461	16,071	11,067	18,549	12,811	20,991	14,540
Total Personal Income	1,079,293	654,638	1,368,430	812,603	1,700,764	997,751	2,059,705	1,196,698
Total Corporate Sales	1,643,167	1,557,663	1,934,439	1,934,029	2,268,961	2,366,406	2,627,448	2,834,790
NY State Tax Revenue	128,561	189,823	162,709	237,968	202,008	293,885	244,433	354,124
NY Local Tax Revenue	133,852	197,635	169,405	247,762	210,322	305,980	254,493	368,698

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Kings County. Impacts within Kings County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Queens County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Queens County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Queens County ranked sixth among all counties in the State of New York in terms of the size of this industry. Within Queens County during 2008, as compared to other industries, Offices of Physicians ranked:

- 3rd in business establishments
- 11th in employment
- 5th in personal income
- 12th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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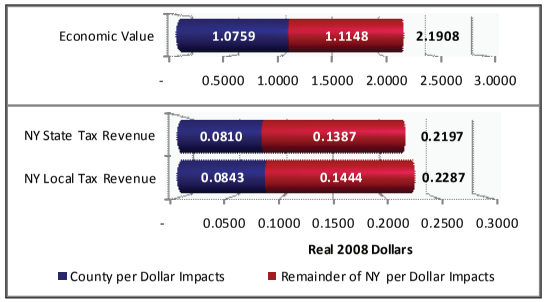

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Queens County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Queens County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

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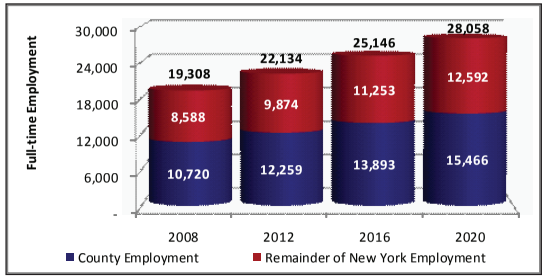

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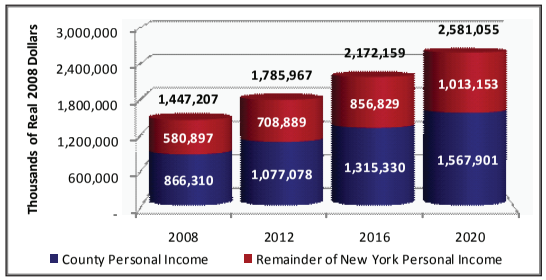

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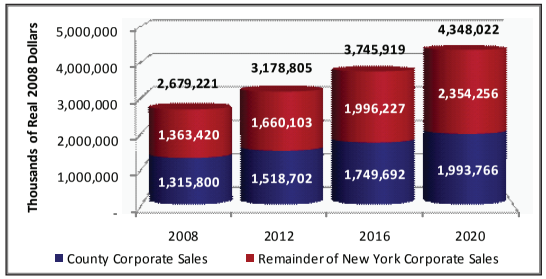

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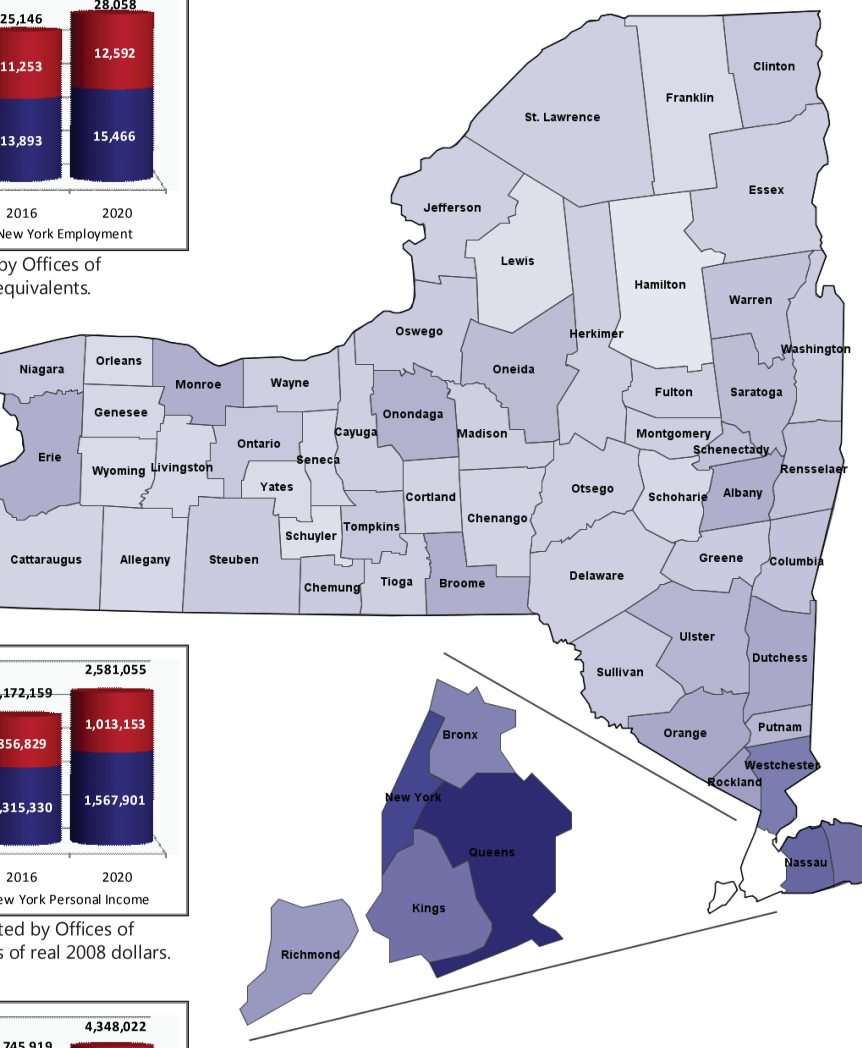

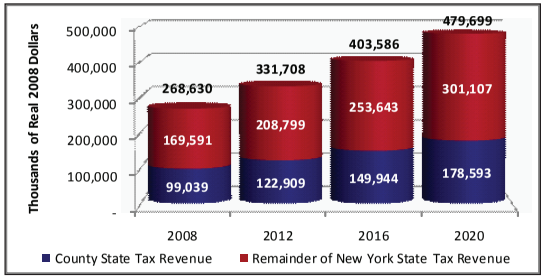

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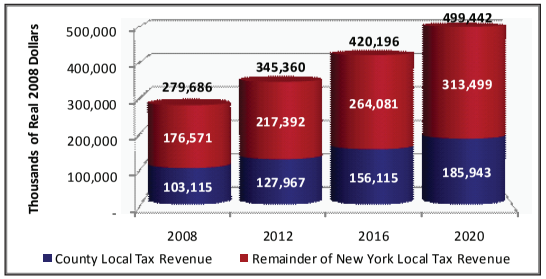

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	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	10,720	8,588	12,259	9,874	13,893	11,253	15,466	12,592
Total Personal Income	866,310	580,897	1,077,078	708,889	1,315,330	856,829	1,567,901	1,013,153
Total Corporate Sales	1,315,800	1,363,420	1,518,702	1,660,103	1,749,692	1,996,227	1,993,766	2,354,256
NY State Tax Revenue	99,039	169,591	122,909	208,799	149,944	253,643	178,593	301,107
NY Local Tax Revenue	103,115	176,571	127,967	217,392	156,115	264,081	185,943	313,499

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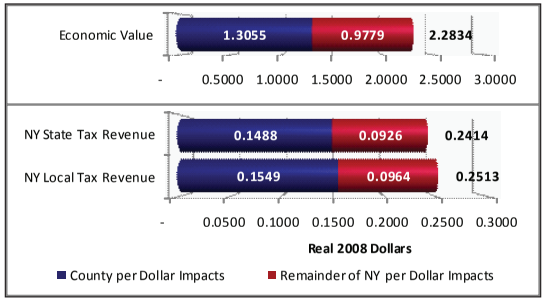

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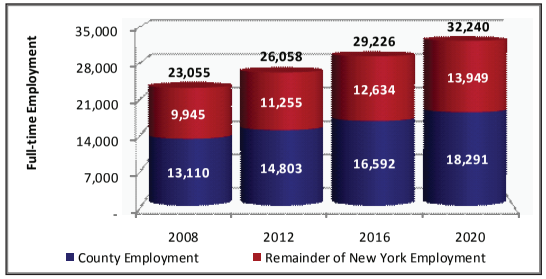

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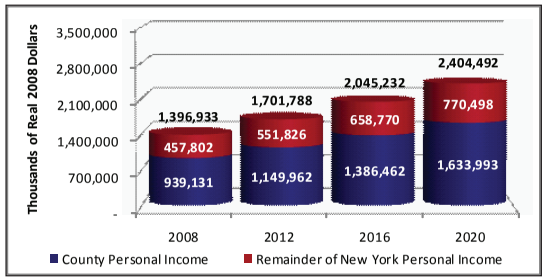

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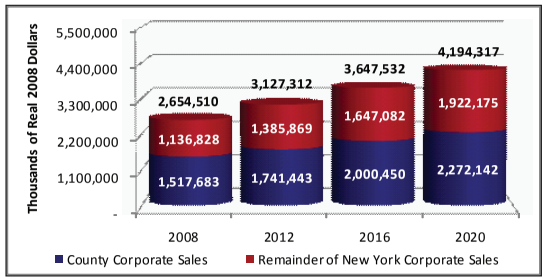

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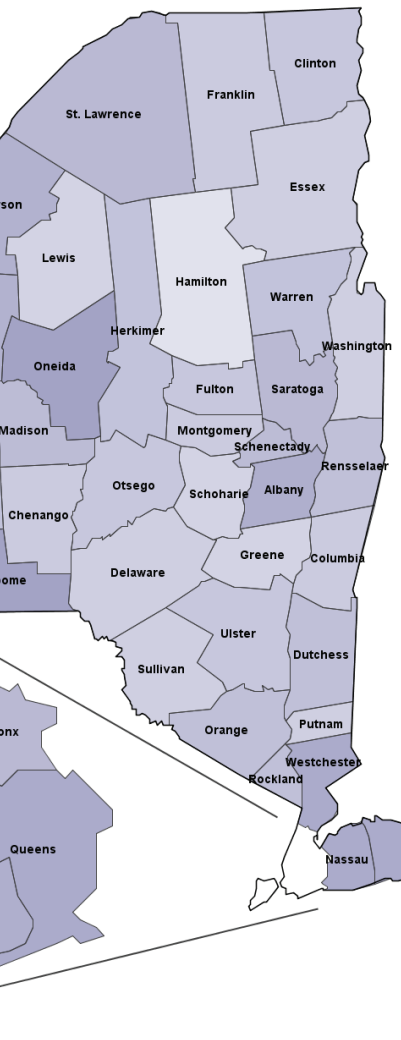

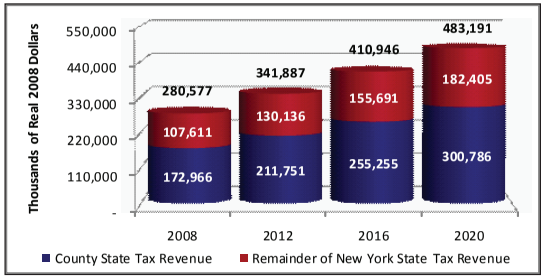

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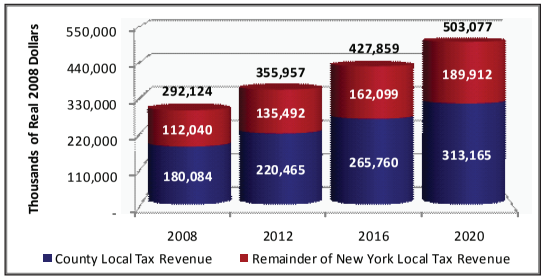

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Erie County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Erie County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	13,110	9,945	14,803	11,255	16,592	12,634	18,291	13,949
Total Personal Income	939,131	457,802	1,149,962	551,826	1,386,462	658,770	1,633,993	770,498
Total Corporate Sales	1,517,683	1,136,828	1,741,443	1,385,869	2,000,450	1,647,082	2,272,142	1,922,175
NY State Tax Revenue	172,966	107,611	211,751	130,136	255,255	155,691	300,786	182,405
NY Local Tax Revenue	180,084	112,040	220,465	135,492	265,760	162,099	313,165	189,912

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Erie County. Impacts within Erie County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Onondaga County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Onondaga County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Onondaga County ranked eighth among all counties in the State of New York in terms of the size of this industry. Within Onondaga County during 2008, as compared to other industries, Offices of Physicians ranked:

- 2nd in business establishments
- 4th in employment
- 3rd in personal income
- 6th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of an industry
- **Indirect effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by an industry in the process of conducting business
- **Induced effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by employees of an industry in the process of utilizing their personal income

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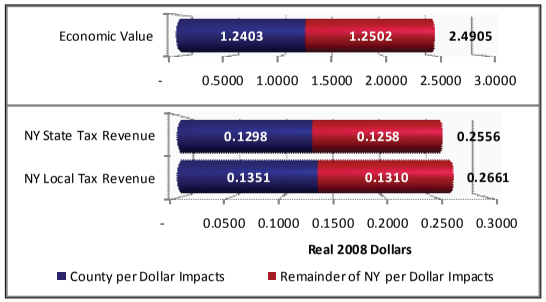

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Onondaga County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Onondaga County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
- total personal income created - **Figure 2**
- total corporate sales generated - **Figure 3**
- New York state tax revenue - **Figure 4**
- New York local tax revenue - **Figure 5**

All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Onondaga County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Onondaga County on all counties in the State of New York are displayed in **Map 1**.

The Medical Society of the State of New York (MSSNY) represents the interests of patients and physicians in an ongoing effort to assure quality health care services for all New Yorkers. It is the largest and oldest organization of licensed physicians, medical residents, and medical students in the State of New York. Members participate in both the state society and in their local county medical societies.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in Onondaga County, NY

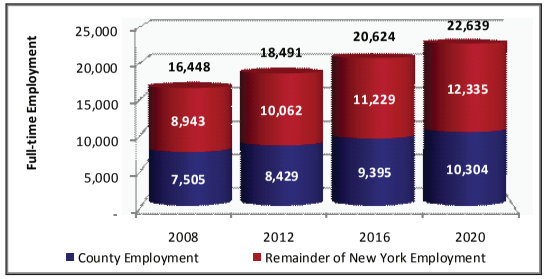


Figure 1: Total Employment supported by Offices of Physicians in Onondaga County, in full-time equivalents.

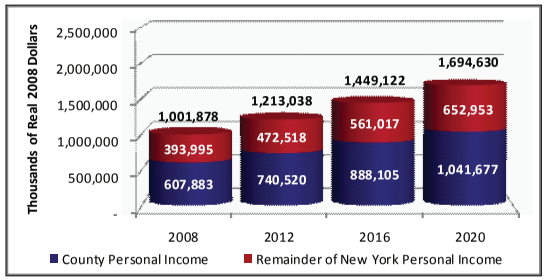


Figure 2: Total Personal Income supported by Offices of Physicians in Onondaga County, in thousands of real 2008 dollars.

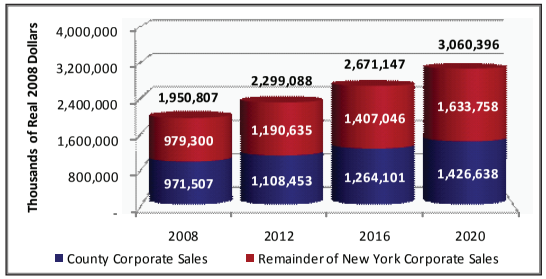
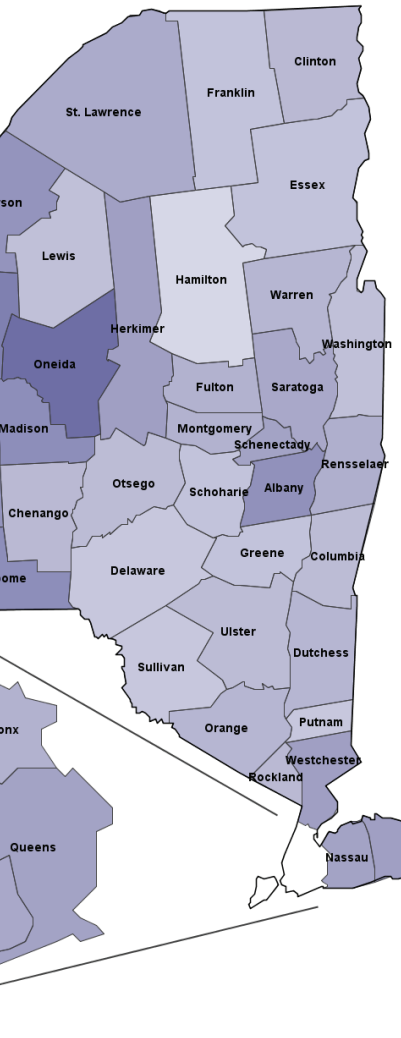


Figure 3: Total Corporate Sales supported by Offices of Physicians in Onondaga County, in thousands of real 2008 dollars.



Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Onondaga County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

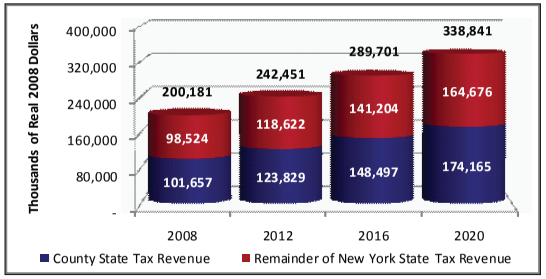


Figure 4: NY State Tax Revenue supported by Offices of Physicians in Onondaga County, in thousands of real 2008 dollars.

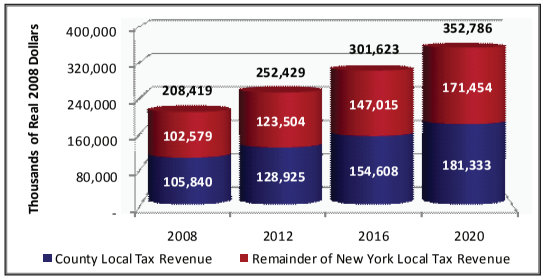


Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Onondaga County, in thousands of real 2008 dollars.

Impact Concept	2008		2012		2016		2020	
	County	Rest of NY	County	Rest of NY	County	Rest of NY	County	Rest of NY
Total Employment	7,505	8,943	8,429	10,062	9,395	11,229	10,304	12,335
Total Personal Income	607,883	393,995	740,520	472,518	888,105	561,017	1,041,677	652,953
Total Corporate Sales	971,507	979,300	1,108,453	1,190,635	1,264,101	1,407,046	1,426,638	1,633,758
NY State Tax Revenue	101,657	98,524	123,829	118,622	148,497	141,204	174,165	164,676
NY Local Tax Revenue	105,840	102,579	128,925	123,504	154,608	147,015	181,333	171,454

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Onondaga County. Impacts within Onondaga County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Bronx County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Bronx County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Bronx County ranked ninth among all counties in the State of New York in terms of the size of this industry. Within Bronx County during 2008, as compared to other industries, Offices of Physicians ranked:

- 4th in business establishments
- 12th in employment
- 5th in personal income
- 10th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of an industry
- **Indirect effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by an industry in the process of conducting business
- **Induced effects:** the total employment, personal income, corporate sales, etc. required to provide all goods and services consumed by employees of an industry in the process of utilizing their personal income

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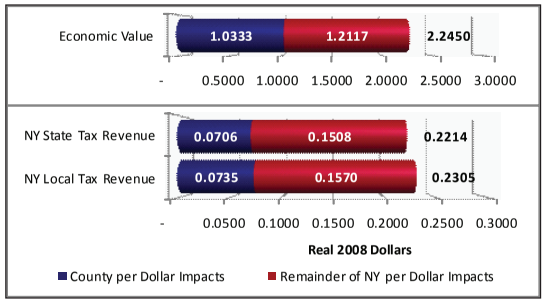

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Bronx County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Bronx County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
- total personal income created - **Figure 2**
- total corporate sales generated - **Figure 3**
- New York state tax revenue - **Figure 4**
- New York local tax revenue - **Figure 5**

All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Bronx County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Bronx County on all counties in the State of New York are displayed in **Map 1**.

The Medical Society of the State of New York (MSSNY) represents the interests of patients and physicians in an ongoing effort to assure quality health care services for all New Yorkers. It is the largest and oldest organization of licensed physicians, medical residents, and medical students in the State of New York. Members participate in both the state society and in their local county medical societies.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in Bronx County, NY

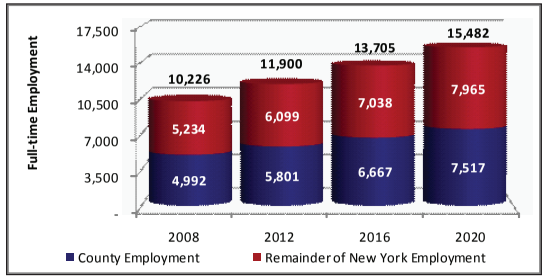

Figure 1: Total Employment supported by Offices of Physicians in Bronx County, in full-time equivalents.

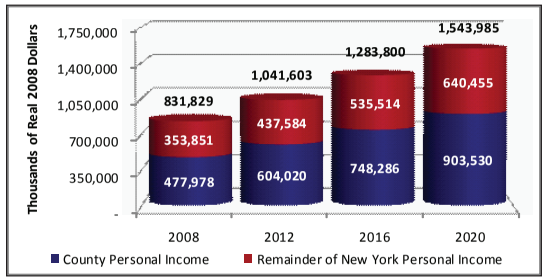

Figure 2: Total Personal Income supported by Offices of Physicians in Bronx County, in thousands of real 2008 dollars.

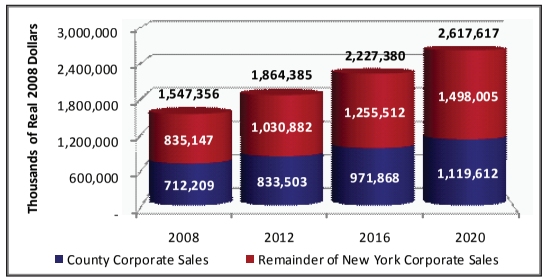

Figure 3: Total Corporate Sales supported by Offices of Physicians in Bronx County, in thousands of real 2008 dollars.

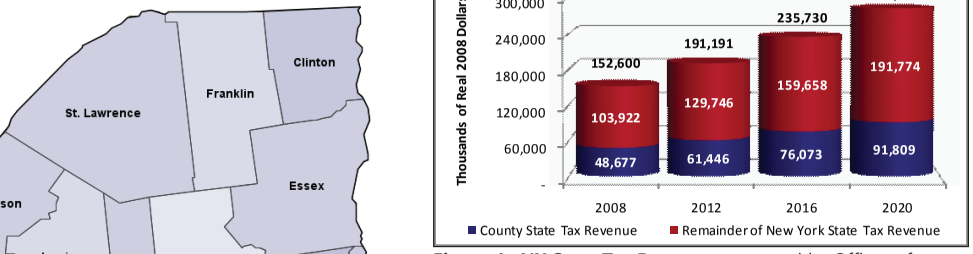

Figure 4: NY State Tax Revenue supported by Offices of Physicians in Bronx County, in thousands of real 2008 dollars.

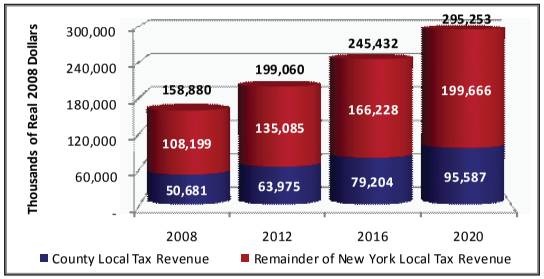

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Bronx County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Bronx County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	4,992	5,234	5,801	6,099	6,667	7,038	7,517	7,965
Total Personal Income	477,978	353,851	604,020	437,584	748,286	535,514	903,530	640,455
Total Corporate Sales	712,209	835,147	833,503	1,030,882	971,868	1,255,512	1,119,612	1,498,005
NY State Tax Revenue	48,677	103,922	61,446	129,746	76,073	159,658	91,809	191,774
NY Local Tax Revenue	50,681	108,199	63,975	135,085	79,204	166,228	95,587	199,666

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Bronx County. Impacts within Bronx County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Monroe County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Monroe County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Monroe County ranked 10th among all counties in the State of New York in terms of the size of this industry. Within Monroe County during 2008, as compared to other industries, Offices of Physicians ranked:

- 3rd in business establishments
- 9th in employment
- 6th in personal income
- 15th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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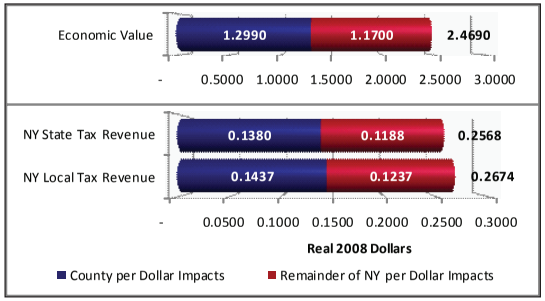

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Monroe County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Monroe County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

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All five key measures are summarized in **Table 1**. Economic impacts per dollar spent on Private Practice Medical care in Monroe County during 2008 are displayed in **Figure 6**, and include:

- economic value (total corporate sales) per dollar
- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Monroe County on all counties in the State of New York are displayed in **Map 1**.

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Economic Impacts of Private Practice Physicians in Monroe County, NY

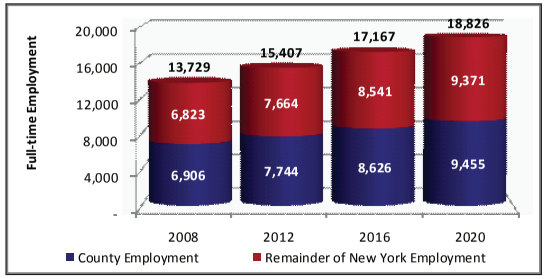


Figure 1: Total Employment supported by Offices of Physicians in Monroe County, in full-time equivalents.

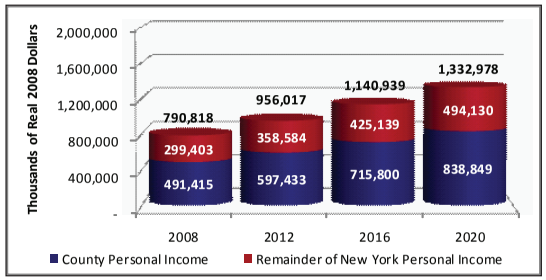


Figure 2: Total Personal Income supported by Offices of Physicians in Monroe County, in thousands of real 2008 dollars.

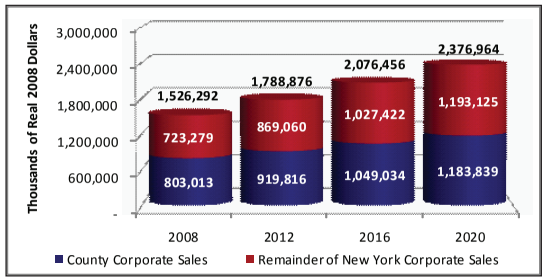
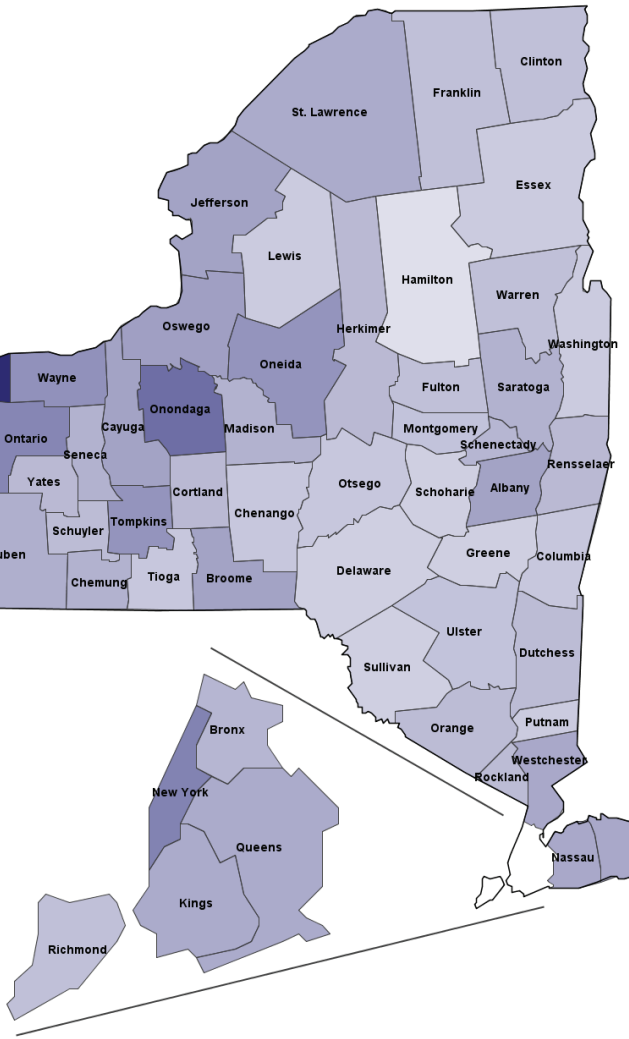


Figure 3: Total Corporate Sales supported by Offices of Physicians in Monroe County, in thousands of real 2008 dollars.



Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Monroe County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

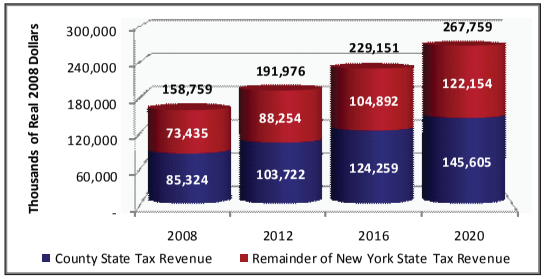


Figure 4: NY State Tax Revenue supported by Offices of Physicians in Monroe County, in thousands of real 2008 dollars.

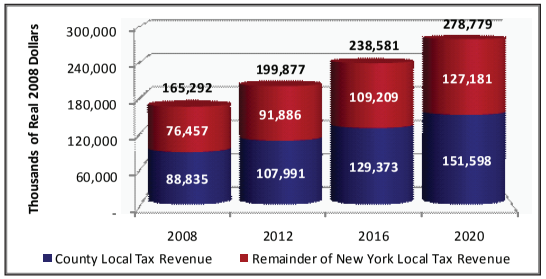


Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Monroe County, in thousands of real 2008 dollars.

Impact Concept	2008		2012		2016		2020	
	County	Rest of NY	County	Rest of NY	County	Rest of NY	County	Rest of NY
Total Employment	6,906	6,823	7,744	7,664	8,626	8,541	9,455	9,371
Total Personal Income	491,415	299,403	597,433	358,584	715,800	425,139	838,849	494,130
Total Corporate Sales	803,013	723,279	919,816	869,060	1,049,034	1,027,422	1,183,839	1,193,125
NY State Tax Revenue	85,324	73,435	103,722	88,254	124,259	104,892	145,605	122,154
NY Local Tax Revenue	88,835	76,457	107,991	91,886	129,373	109,209	151,598	127,181

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Monroe County. Impacts within Monroe County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

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- 4th in employment
- 2nd in personal income
- 6th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

- **Direct effects:** the total employment, personal income, corporate sales, etc. of an industry
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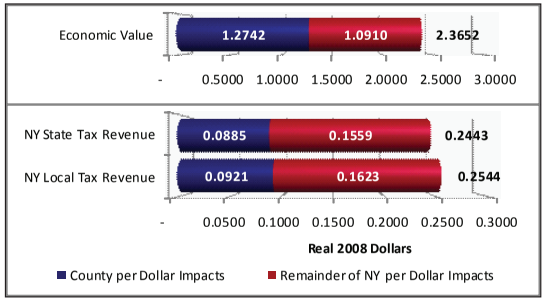

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Albany County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

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Economic Impacts of Private Practice Physicians in Albany County, NY

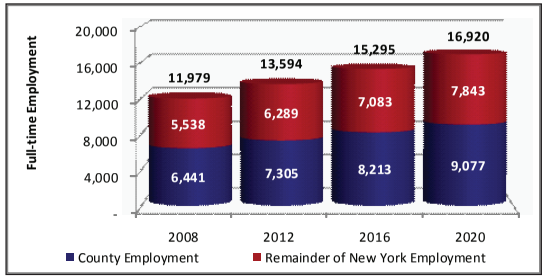
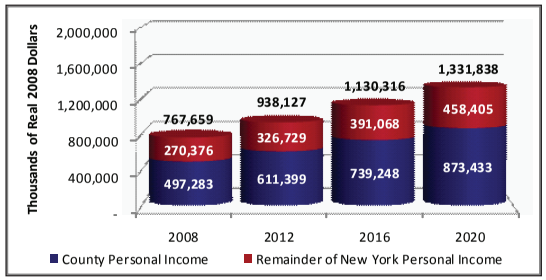


Figure 1: Total Employment supported by Offices of Physicians in Albany County, in full-time equivalents.



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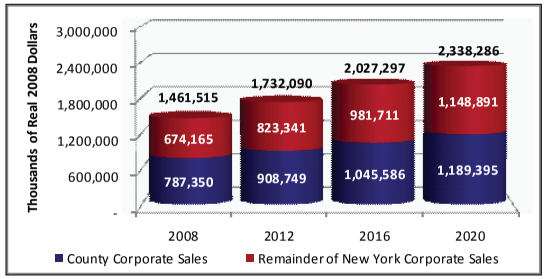

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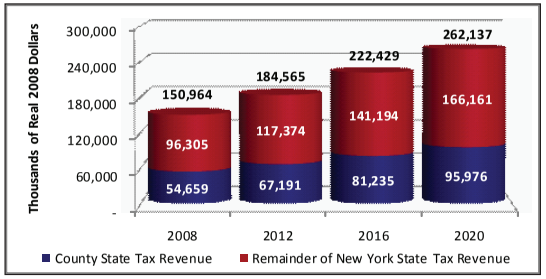

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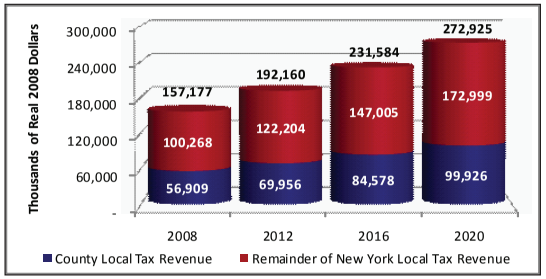

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	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	6,441	5,538	7,305	6,289	8,213	7,083	9,077	7,843
Total Personal Income	497,283	270,376	611,399	326,729	739,248	391,068	873,433	458,405
Total Corporate Sales	787,350	674,165	908,749	823,341	1,045,586	981,711	1,189,395	1,148,891
NY State Tax Revenue	54,659	96,305	67,191	117,374	81,235	141,194	95,976	166,161
NY Local Tax Revenue	56,909	100,268	69,956	122,204	84,578	147,005	99,926	172,999

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Private Practice Physicians play an increasingly important role in Richmond County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Richmond County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Richmond County ranked 12th among all counties in the State of New York in terms of the size of this industry. Within Richmond County during 2008, as compared to other industries, Offices of Physicians ranked:

- 1st in business establishments
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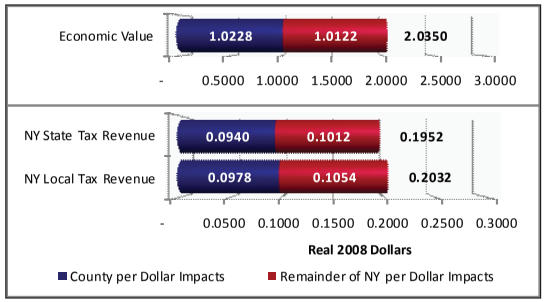

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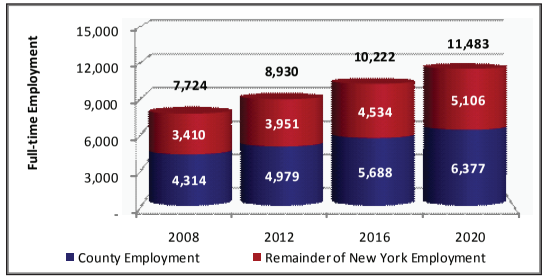

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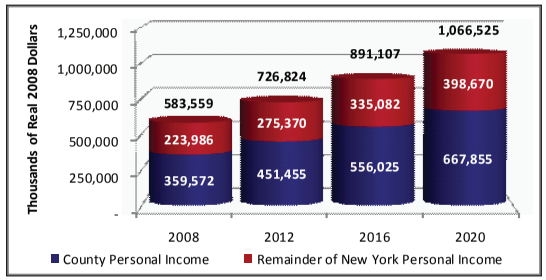
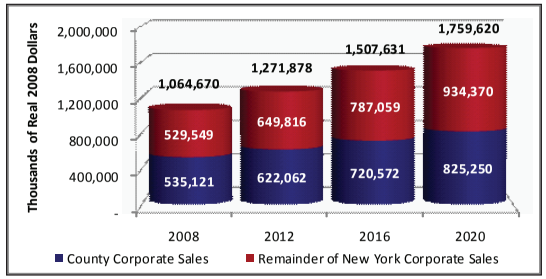


Figure 2: Total Personal Income supported by Offices of Physicians in Richmond County, in thousands of real 2008 dollars.



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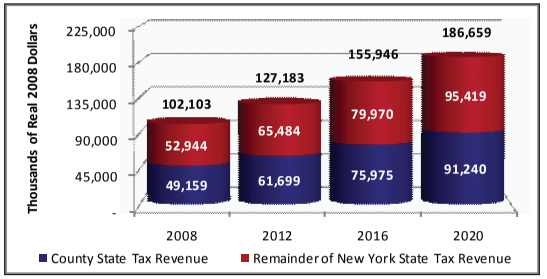
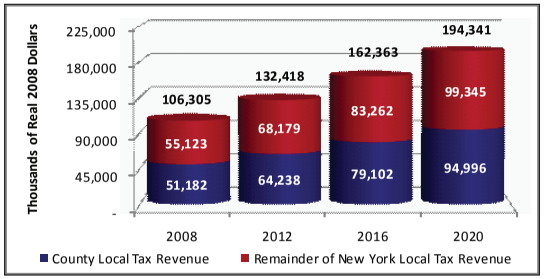


Figure 4: NY State Tax Revenue supported by Offices of Physicians in Richmond County, in thousands of real 2008 dollars.



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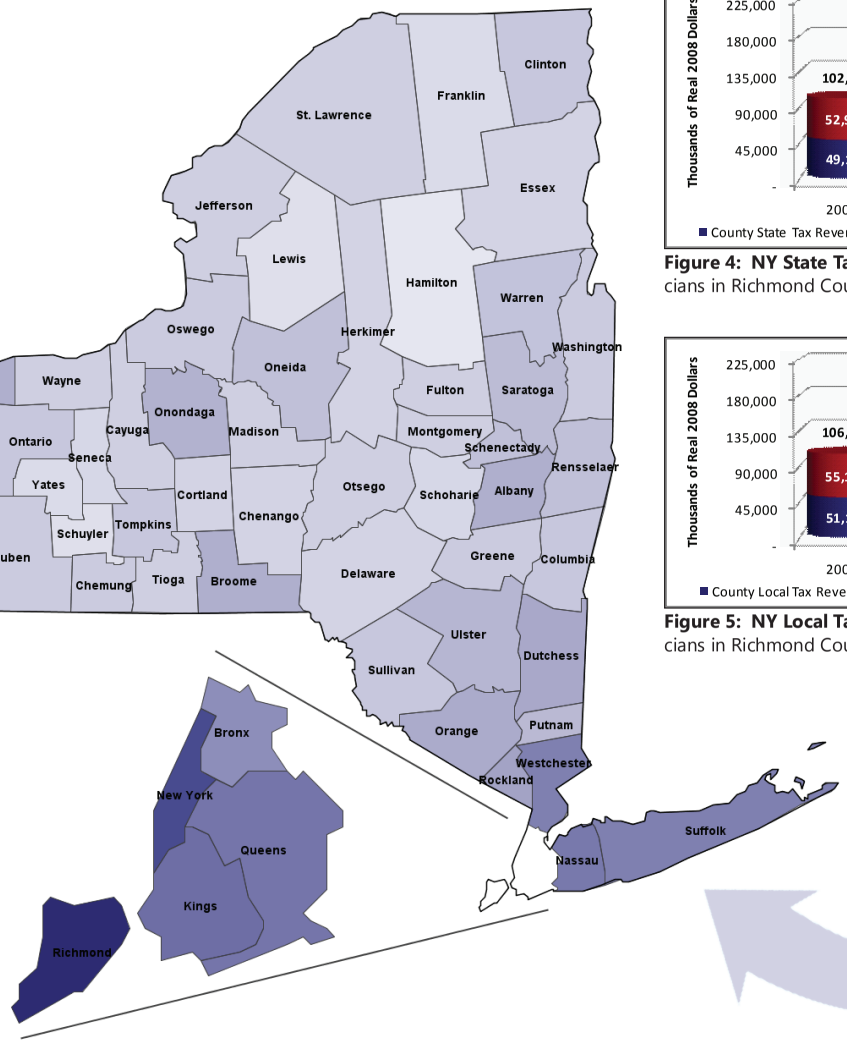

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	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	4,314	3,410	4,979	3,951	5,688	4,534	6,377	5,106
Total Personal Income	359,572	223,986	451,455	275,370	556,025	335,082	667,855	398,670
Total Corporate Sales	535,121	529,549	622,062	649,816	720,572	787,059	825,250	934,370
NY State Tax Revenue	49,159	52,944	61,699	65,484	75,975	79,970	91,240	95,419
NY Local Tax Revenue	51,182	55,123	64,238	68,179	79,102	83,262	94,996	99,345

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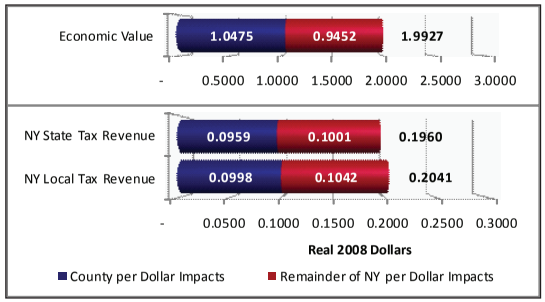

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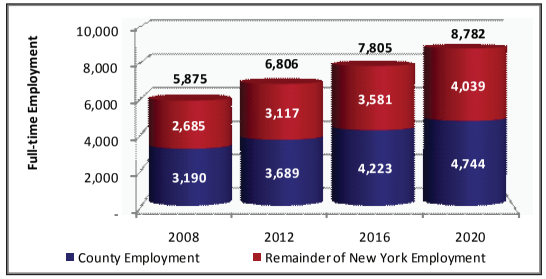

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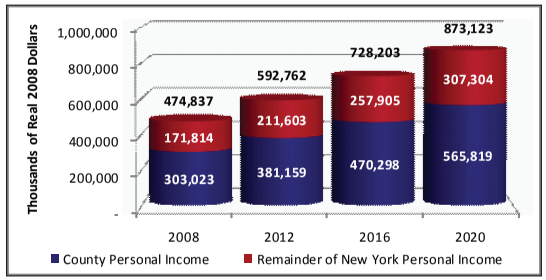

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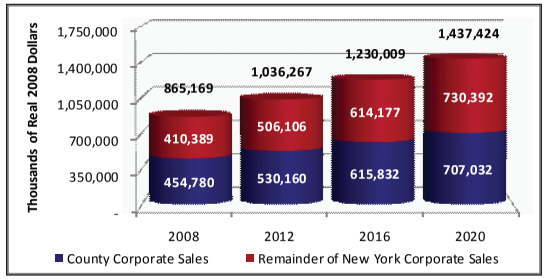

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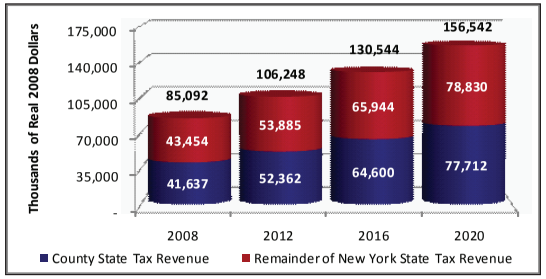

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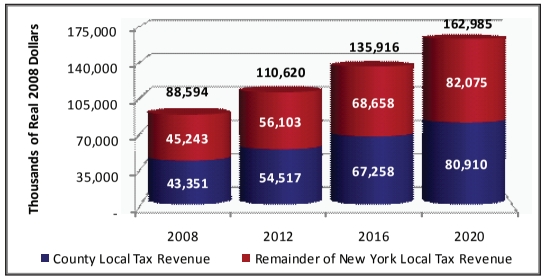

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Total Employment	3,190	2,685	3,689	3,117	4,223	3,581	4,744	4,039
Total Personal Income	303,023	171,814	381,159	211,603	470,298	257,905	565,819	307,304
Total Corporate Sales	454,780	410,389	530,160	506,106	615,832	614,177	707,032	730,392
NY State Tax Revenue	41,637	43,454	52,362	53,885	64,600	65,944	77,712	78,830
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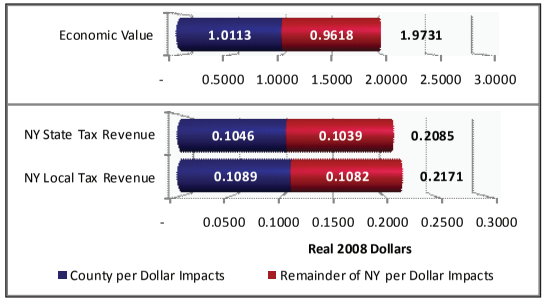

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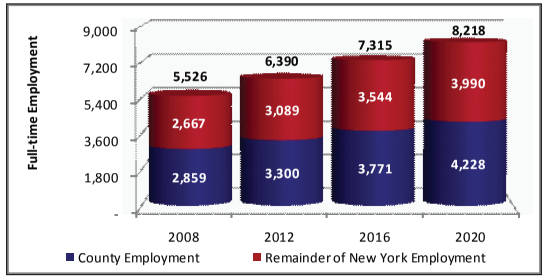

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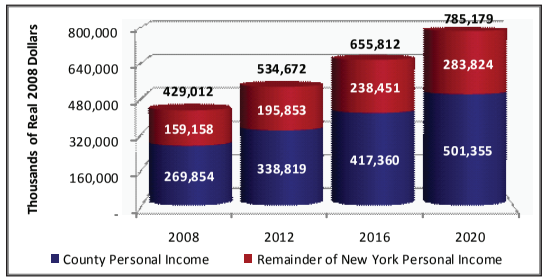

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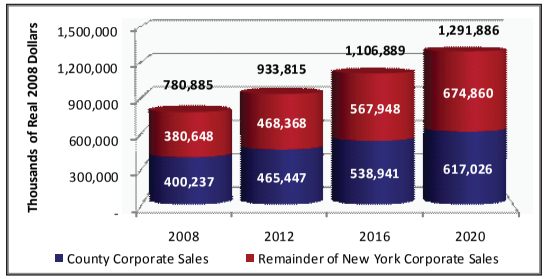

Figure 3: Total Corporate Sales supported by Offices of Physicians in Dutchess County, in thousands of real 2008 dollars.

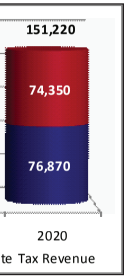

Figure 4: NY State Tax Revenue supported by Offices of Physicians in Dutchess County, in thousands of real 2008 dollars.

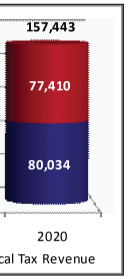

Figure 5: NY Local Tax Revenue supported by Offices of Physicians in Dutchess County, in thousands of real 2008 dollars.

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Dutchess County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	2,859	2,667	3,300	3,089	3,771	3,544	4,228	3,990
Total Personal Income	269,854	159,158	338,819	195,853	417,360	238,451	501,355	283,824
Total Corporate Sales	400,237	380,648	465,447	468,368	538,941	567,948	617,026	674,860
NY State Tax Revenue	41,386	41,131	51,956	50,948	63,996	62,271	76,870	74,350
NY Local Tax Revenue	43,089	42,824	54,095	53,045	66,629	64,834	80,034	77,410

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Dutchess County. Impacts within Dutchess County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Orange County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Orange County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Orange County ranked 15th among all counties in the State of New York in terms of the size of this industry. Within Orange County during 2008, as compared to other industries, Offices of Physicians ranked:

- 3rd in business establishments
- 4th in employment
- 2nd in personal income
- 4th in corporate sales

Total economic impact for any industry is the aggregate total, across all regions, of three distinct types of economic effect caused by the activity of that industry. Those effect types are:

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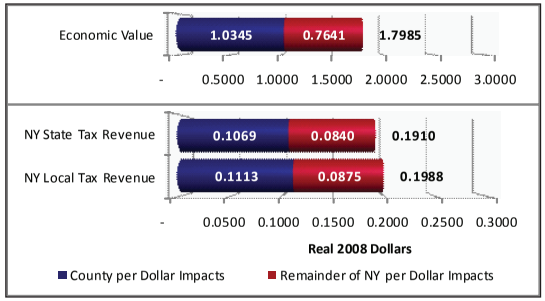

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Orange County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Orange County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

- total employment supported - **Figure 1**
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- NY state tax revenue per dollar
- NY local tax revenue per dollar

Finally, relative economic impacts during 2008 of Offices of Physicians in Orange County on all counties in the State of New York are displayed in **Map 1**.

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Prepared for the MSSNY by Specialized Analytics and Kavet, Rockler & Associates.

MSSNY
Medical Society of the State of New York

Economic Impacts of Private Practice Physicians in Orange County, NY

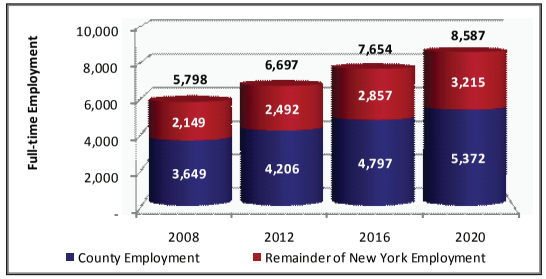


Figure 1: Total Employment supported by Offices of Physicians in Orange County, in full-time equivalents.

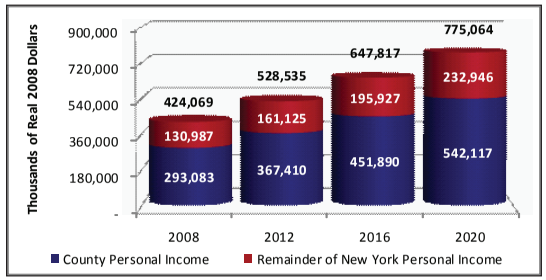
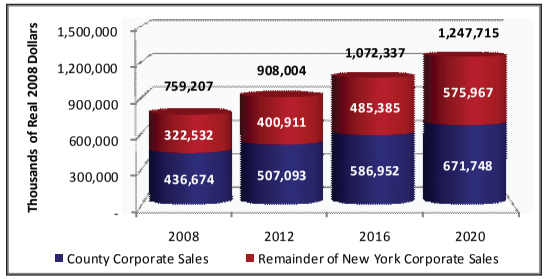


Figure 2: Total Personal Income supported by Offices of Physicians in Orange County, in thousands of real 2008 dollars.



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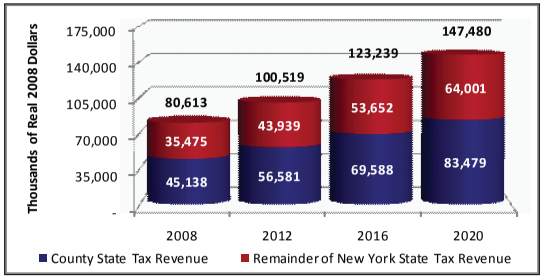
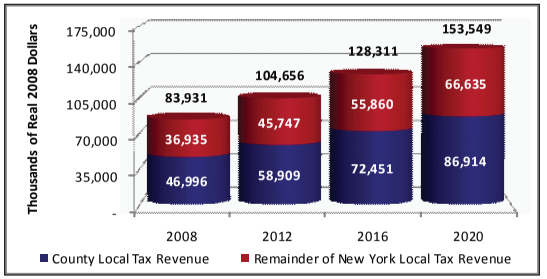


Figure 4: NY State Tax Revenue supported by Offices of Physicians in Orange County, in thousands of real 2008 dollars.



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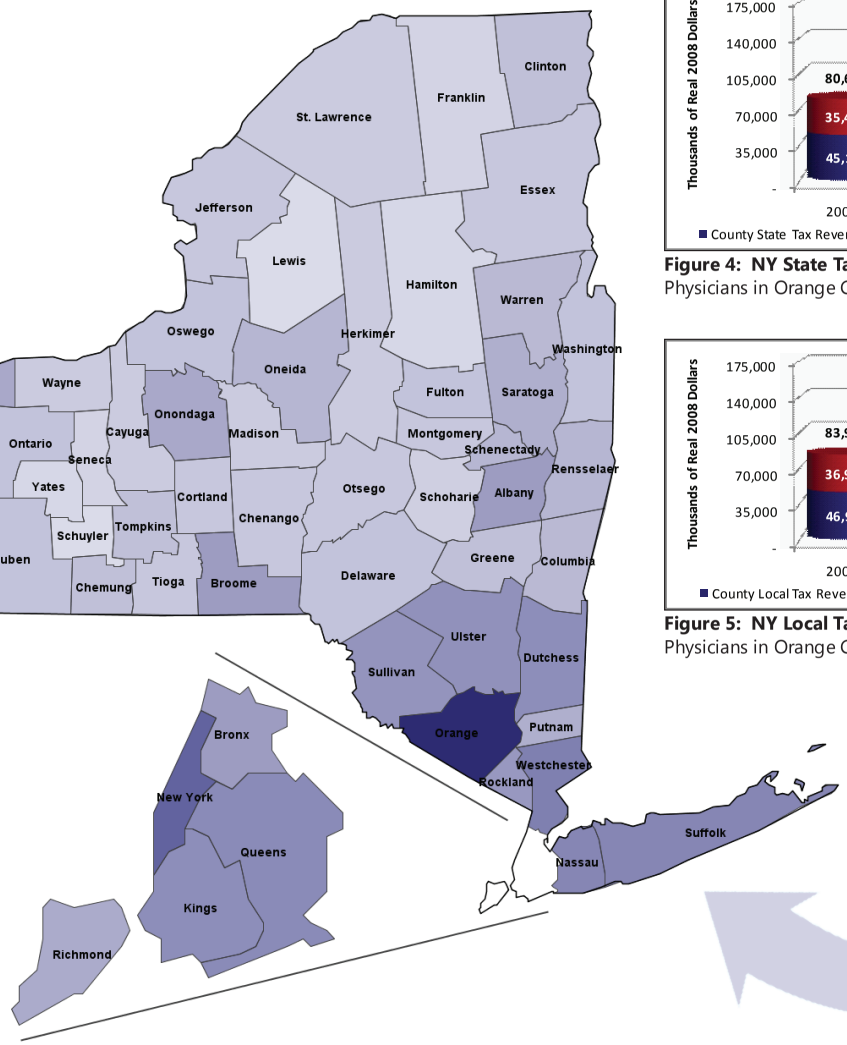

Map 1: Relative distribution of economic impacts during 2008. This map indicates relative economic impacts observed in each county of the State of New York that result from the activity of Offices of Physicians in Orange County during 2008. Total employment, total personal income, total corporate sales, and total NY tax revenues (state plus local) are equally weighted in this map. Darker blue shading indicates relatively greater observed economic impacts.

	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	3,649	2,149	4,206	2,492	4,797	2,857	5,372	3,215
Total Personal Income	293,083	130,987	367,410	161,125	451,890	195,927	542,117	232,946
Total Corporate Sales	436,674	322,532	507,093	400,911	586,952	485,385	671,748	575,967
NY State Tax Revenue	45,138	35,475	56,581	43,939	69,588	53,652	83,479	64,001
NY Local Tax Revenue	46,996	36,935	58,909	45,747	72,451	55,860	86,914	66,635

Table 1: Economic Impacts that result from the activity of Offices of Physicians in Orange County. Impacts within Orange County and within the remainder of the State of New York are indicated. Total employment is in full-time equivalents. Total personal income, total corporate sales, total NY state tax revenue, and total NY local tax revenue are in thousands of real 2008 dollars.

Private Practice Physicians play an increasingly important role in Oneida County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Oneida County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Oneida County ranked 16th among all counties in the State of New York in terms of the size of this industry. Within Oneida County during 2008, as compared to other industries, Offices of Physicians ranked:

- 2nd in business establishments
- 6th in employment
- 2nd in personal income
- 4th in corporate sales

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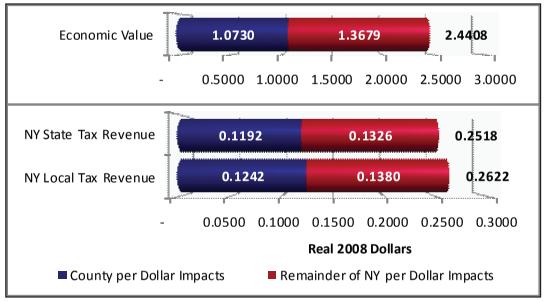

Figure 6: Economic Impacts per Dollar spent on Private Practice Medical care in Oneida County, in real 2008 dollars. Indicated are economic value (total corporate sales) generated, and New York state and local tax revenue collected.

The Redyn model, a product of Specialized Analytics, was used to determine the total economic impact of Offices of Physicians in Oneida County. Five key measures of these economic impacts within the State of New York are presented here for 2008 through 2020, in four-year increments. Those concepts and the figures in which they are displayed are:

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Economic Impacts of Private Practice Physicians in Oneida County, NY

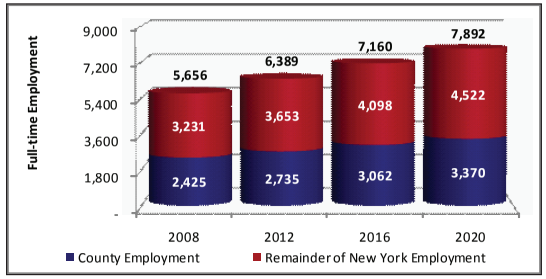


Figure 1: Total Employment supported by Offices of Physicians in Oneida County, in full-time equivalents.

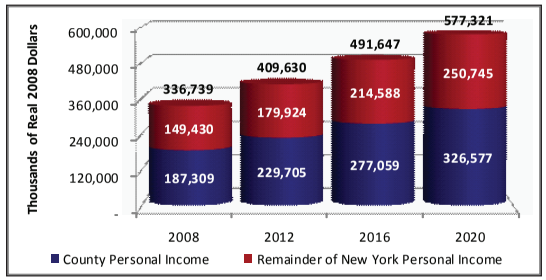


Figure 2: Total Personal Income supported by Offices of Physicians in Oneida County, in thousands of real 2008 dollars.

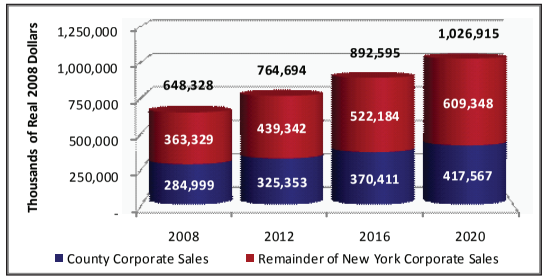


Figure 3: Total Corporate Sales supported by Offices of Physicians in Oneida County, in thousands of real 2008 dollars.

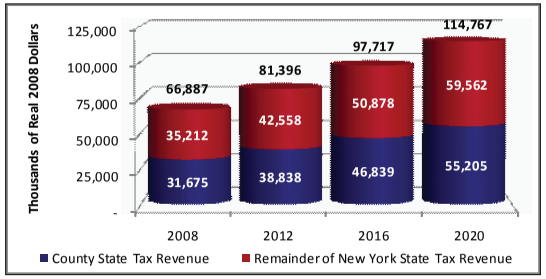
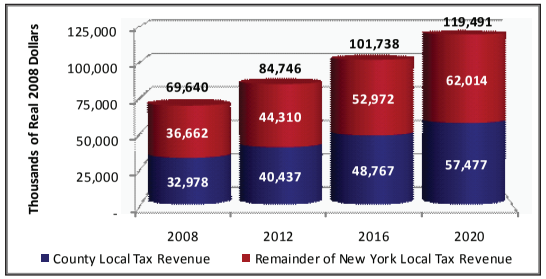


Figure 4: NY State Tax Revenue supported by Offices of Physicians in Oneida County, in thousands of real 2008 dollars.



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	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	2,425	3,231	2,735	3,653	3,062	4,098	3,370	4,522
Total Personal Income	187,309	149,430	229,705	179,924	277,059	214,588	326,577	250,745
Total Corporate Sales	284,999	363,329	325,353	439,342	370,411	522,184	417,567	609,348
NY State Tax Revenue	31,675	35,212	38,838	42,558	46,839	50,878	55,205	59,562
NY Local Tax Revenue	32,978	36,662	40,437	44,310	48,767	52,972	57,477	62,014

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Private Practice Physicians play an increasingly important role in Broome County, and the State of New York as a whole, in terms of their contribution to the broader economy. The Medical Society of the State of New York (MSSNY) sponsored an in-depth study to develop an understanding of the total economic impacts of Private Practice Physicians in the State of New York, the Broome County portion of which is presented here. Such an understanding is useful for Private Practice Physicians in the pursuit of goals important to them and the patients they serve.

The activity of physicians engaged in the private practice of medicine is classified in the North American Industrial Classification System (NAICS) as "Offices of Physicians," and is given the designation 62111 at the 5-digit level of detail. During 2008, Broome County ranked 17th among all counties in the State of New York in terms of the size of this industry. Within Broome County during 2008, as compared to other industries, Offices of Physicians ranked:

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- 8th in employment
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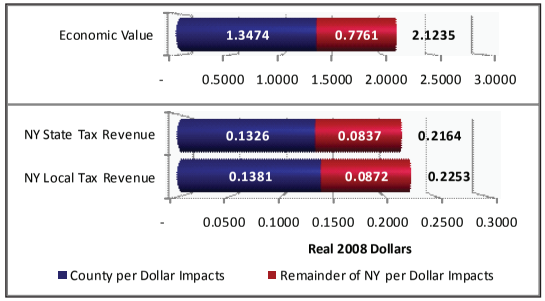

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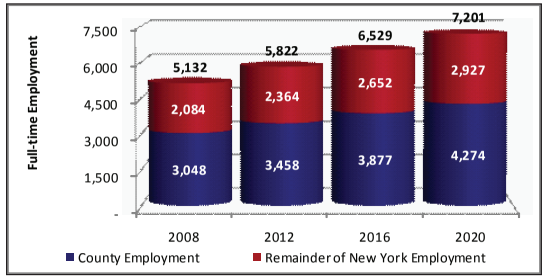
Economic Impacts of Private Practice Physicians in Broome County, NY



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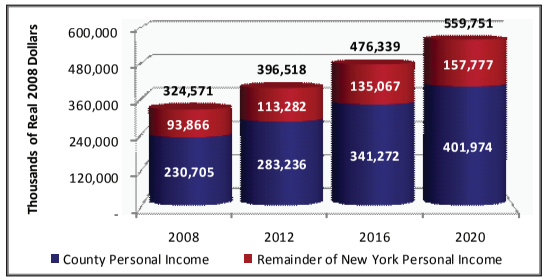
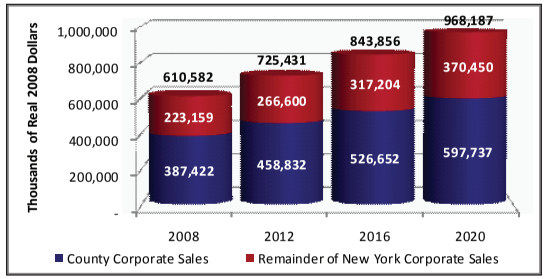


Figure 2: Total Personal Income supported by Offices of Physicians in Broome County, in thousands of real 2008 dollars.



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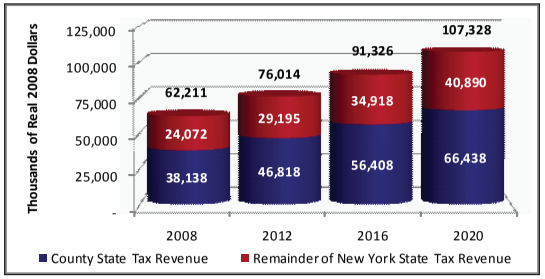

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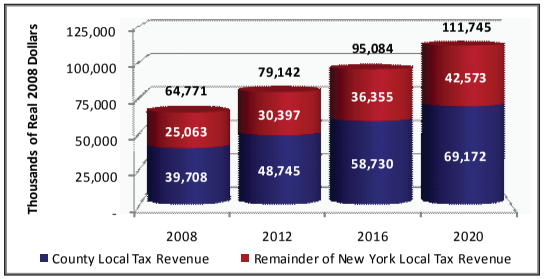

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	2008		2012		2016		2020	
Impact Concept	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**	**County**	**Rest of NY**
Total Employment	3,048	2,084	3,458	2,364	3,877	2,652	4,274	2,927
Total Personal Income	230,705	93,866	283,236	113,282	341,272	135,067	401,974	157,777
Total Corporate Sales	387,422	223,159	458,832	266,600	526,652	317,204	597,737	370,450
NY State Tax Revenue	38,138	24,072	46,818	29,195	56,408	34,918	66,438	40,890
NY Local Tax Revenue	39,708	25,063	48,745	30,397	58,730	36,355	69,172	42,573

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