New York's Insurance Industry: Boosting Economic Returns for the State

Produced for NY First

October 1, 2017

Goss & Associates

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Boosting Economic Returns for the State

"I consider the property/casualty insurance industry a vital component of New York State's overall economy and this report confirms my viewpoint. Moving forward, it is vital that the insurance industry continues to grow – providing good paying jobs, bolstering our state's financial future, and delivering an important service to New York families and businesses who need financial protection in their day to day lives."

– Senate Insurance Committee Chair James L. Seward (51st District)

The major findings of this study are:

- Over the last decade, New York's productivity growth in the insurance sector was 2.33 times that of the overall U.S. insurance industry. This rapid productivity growth has brought significant economic returns to the state.

- Over the five year period 2016-2020, New York's property & casualty industry will generate $202.9 billion in economic impacts and support more than 152,000 jobs annually across the state.

- Moreover, it is concluded that every 1,000 New York property & casualty jobs supports another 1,550 jobs in industries linked to this insurance sector.

- Average 2015 weekly wages were $764 higher in the New York insurance industry than the state average.

- Between 2006 and 2015, property & casualty industry purchases of municipal bonds saved the New York taxpayer an average of $153.6 million annually, or a total of $1.5 billion.

- In 2016, New York's property & casualty industry produced an estimated $2.42 billion in state and local collections.

New York's Insurance Industry: Boosting Economic Returns for the State

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Goals of the study

The goals of this study are to estimate the impact New York's property-casualty industry on the New York economy, and to update a previous study[2] completed by Goss & Associates.

Specific goals of the study are to:

1. Estimate the economic impact of New York's property-casualty industry for the period 2016 to 2020 inclusive for:
   - the state of New York
   - each New York county
   - each New York assembly district
   - each New York senate district and
   - each New York economic development district

2. Quantify important social impacts of the property-casualty industry on the state of New York.

3. Quantify the economic impact of the New York property-casualty insurance industry on other New York industries.

4. Quantify the spillover effects of the New York property-casualty insurance industry on new business venture formation, enterprise growth, employment, and city and state tax collections.

The Goss & Associates research team thanks the Board of Directors and staff of NY First. However, any errors, omissions, or misstatements are solely the responsibility of Goss & Associates and the principal investigator.

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[1]This study was completed independent of Creighton University. As such, Creighton University bears no responsibility for findings or statements by Ernest Goss, Scott Strain, or Goss & Associates, Economic Solutions.

[2]The Economic Importance of New York's Property-Casualty Insurance Industry, 2014-18. http://tinyurl.com/ybbvxa3d

Glossary

Term	Definition
Agencies, brokerages, and other insurance	This industry group comprises establishments primarily engaged in (1) acting as agents (i.e., brokers) in selling annuities and insurance policies or (2) providing other employee benefits and insurance related services, such as claims adjustment and third party administration.
Discounted	Unless stated otherwise, all financial data in this report are stated in 2017 dollars.
Direct impacts	The set of expenditures applied to the predictive model for impact analysis. For example, direct impacts include property-casualty wages paid to its employees.
Direct insurance	This industry comprises establishments primarily engaged in initially underwriting (i.e., assuming the risk and assigning premiums) various types of insurance policies (except life, disability income, accidental death and dismemberment, and health and medical insurance policies).
Direct life insurance carriers	This U.S. industry comprises establishments primarily engaged in initially underwriting (i.e., assuming the risk and assigning premiums) annuities and life insurance policies, disability income insurance policies, and accidental death and dismemberment insurance policies.
Direct P&C carriers	This U.S. industry comprises establishments primarily engaged in initially underwriting (i.e., assuming the risk and assigning premiums) insurance policies that protect policyholders against losses that may occur as a result of property damage or liability.
IMPLAN	Using classic input-output analysis in combination with regional specific Social Accounting Matrices and Multiplier Models, IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, zip code, and federal economic statistics which are specialized by region.
Input-output analysis	A type of applied economic analysis that tracks the interdependence among various producing and consuming sectors of an economy. It measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands. (U.S. Bureau of Economic Analysis)
Insurance carriers	This industry group comprises establishments primarily engaged in underwriting (assuming the risk, assigning premiums, etc.) annuities and insurance policies and investing premiums to build up a portfolio of financial assets to be used against future claims. Industry code=524).
Insurance firms	This is all encompassing and includes all firms in insurance as defined by the U.S. Census Bureau: insurance carriers; agencies, brokerages, and other insurance related activities. Industry code=524.
Insurance industry	Includes all areas of insurance as defined by the U.S. Census Bureau: insurance carriers; Agencies, brokerages, and other insurance related activities; Insurance agencies and brokerages.
Jobs supported	A job in IMPLAN = the annual average of monthly jobs in that industry. Thus, 1 job lasting 12 months = 2 jobs lasting 6 months each or = 3 jobs lasting 4 months each.
Labor income	Wages & salaries plus self-employment income.
Overall sales impacts, or total impacts	Amount of additional sales, including insurance premiums, retail sales, wholesale expenditures, construction sales, etc. It is analogous to gross domestic product (GDP) but will include some double counting and will thus exceed GDP.
P&C Industry	Property-Casualty industry includes carriers as well as agents and brokerages; includes captive, direct response and independent agent system companies.
Payroll	Payroll includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation allowances, sick-leave pay, and employee contributions to qualified pension plans paid during the year to all employees.
Productivity growth	Growth in Gross Domestic Product (GDP) per worker, also premiums per worker.
Self-employment income	Income of proprietors of non-incorporated companies including attorneys, accountants and consultants.
Spillover impact	Impacts in businesses and industries tied indirectly to insurance industry spending. For example, wholesale firms that sell to insurance agency or brokerage firm vendors experience spillover impacts.
Wages and salaries	Wages and salaries represent the total payroll cost of the employee paid by the employer. This includes, wage and salary, all benefits (e.g., health, retirement, etc.) and employer paid payroll taxes (e.g. employer side of social security, unemployment taxes, etc.).

Executive Summary

New York's Insurance Industry: Boosting Economic Returns for the State

I. Economic Impacts of New York's P&C Industry

- Each New York P&C job creates approximately $40,880 in state and local taxes each year.

- The average pay supported by New York's P&C industry, both direct and indirect, was approximately $85,270 for 2016, which was 44.7 percent higher than the average for all New York jobs.

- In 2016, the P&C industry is estimated to have contributed nearly $40.2 billion to the New York economy. Independent P&C firms accounted for approximately $23.3 billion (58.0 percent) of that total. In 2017, it is estimated that the P&C industry will contribute $40.3 billion to the New York economy.

- In 2016, the P&C industry is estimated to have supported, directly and indirectly, approximately 151,143 jobs in New York, with independent P&C firms accounting for 87,663 of that total.

- For the period 2017-2020, the P&C industry is estimated to support an average of approximately 152,775 jobs per year in New York.

> Over the five-year period 2016-2020, New York's P&C firms spending will produce approximately $202.9 billion in output, more than $66.3 billion in wages and salaries, approximately $7.8 billion in self-employment income, and support an average of 152,448 jobs annually.

- According to these estimates, the ratio of total jobs supported for every 1,000 P&C jobs for 2016 is 2,550.[3] Thus, each 1,000 P&C job supports another 1,550 jobs in spillover impacts.

- Between 2016 and 2020, New York's P&C companies will continue to have significant positive impacts on the New York job market.

> For the period 2017-2020, the P&C industry is estimated to support an average of approximately 152,775 jobs per year in New York.

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[3]Total jobs created for 2016 was 151,143 from 59,277 P&C jobs or a 2.55 ratio.
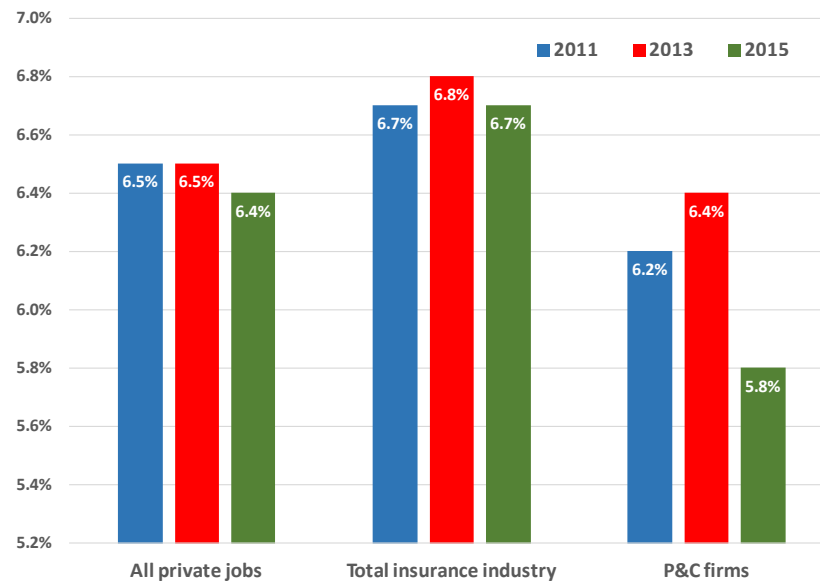
Executive Summary

II.   Impacts by Political Divisions[4]

- **Overall, or revenue impacts for 2016 (in 2017 dollars)**:
  - **Counties:** The top five counties were: New York at $12.5 billion, Nassau at $8.0 billion, Erie at $4.8 billion, Suffolk at $2.2 billion and Albany at $1.6 billion.
  - **Assembly Districts:** The top five districts were: District 76 (Assembly Member Seawright) at $1.0 billion, District 75 (Assembly Member Gottfried) at $1.0 billion, District 73 (Assembly Member Quart) at $1.0 billion, District 74 (Assembly Member Kavanagh) at $1.0 billion and District 67 (Assembly Member Rosenthal) at $1.0 billion.
  - **Senate Districts:** The top five districts were: District 27 (Senator Hoylman) at $2.5 billion, District 28 (Senator Krueger) at $2.5 billion, District 30 (Senator Benjamin) at $2.5 billion, District 31 (Senator Alcantara) at $2.5 billion, and District 9 (Senator Kaminsky) at $1.9 billion.
  - **Economic Development Regions:** The top five districts were: New York City at $14.5 billion, Long Island at $10.2 billion, Western New York at $4.9 billion, Capital Region at $3.2 billion and Mid-Hudson at $2.6 billion.
- **Job impacts for 2016**:
  - **Counties:** The top five counties were: New York City at 33,506, Nassau at 32,404, Erie at 19,265, Suffolk at 10,870, and Westchester at 7,276.
  - **Assembly Districts:** The top five districts were: District 13 (Assembly Member Lavine) at 3,115, District 14 (Assembly Member McDonough) at 3,115, District 15 (Assembly Member Montesano) at 3,115, District 16 (Assembly Member D'Urso) at 3,115, District 17 (Assembly Member McKevitt) at 3,115.
  - **Senate Districts:** The top five districts were: District 6 (Senator Hannon) at 7,615, District 7 (Senator Phillips) at 7,615, District 9 (Senator Kaminsky) at 7,615, District 27 (Senator Hoylman) at 6,700 and District 28 (Senator Krueger) at 6,700.
  - **Economic Development Regions:** The top five regions were: Long Island at 43,273, New York City at 44,223, Western New York at 20,072, Mid-Hudson at 12,280, and Capital Region at 11,451.
- **Wages & Salaries impacts for 2016 (in 2017 dollars)**:
  - **Counties:** The top five counties were: New York City at $5,776,368,646, Nassau at $2,182,136,989, Erie at $1,247,741,042, Suffolk at $572,092,789, and Westchester at $564,122,771.
  - **Assembly Districts:** The top five districts were: District 76 (Assembly Member Seawright) at $481,710,597, District 75 (Assembly Member Gottfried) at $481,710,597, District 73 (Assembly Member Quart) at $481,710,597, District 74 (Assembly Member Kavanaugh) at $481,710,597, District 67 (Assembly Member Rosenthal) at $481,710,597.
  - **Senate Districts:** The top five districts were: District 27 (Senator Hoylman) at $1.2 billion. District 28 (Senator Krueger) at $1.2 billion, District 30 (Senator Benjamin) at $1.2 billion, District 31 (Senator Alcantara) at $1.2 billion and District 26 (Senator Squadron) at $728.0 million.
  - **Economic Development Regions:** The top five regions were: New York City at $6,125,574,302, Long Island at $2,754,229,778, Western New York at $1,277,596,593, Mid-Hudson at $809,712,765, and Capital Region at $718,689,232.

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[4]Implan does not produce estimates for political subdivisions. County impacts are allocated to Senate and Assembly districts based on population. Thus, districts within a county that have almost the same population will have the same economic impacts.

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Figure EX.1: New York's share of U.S. jobs by industry, 2011, 2013, and 2015

Source: Goss & Associates based on U.S. Census data

Figure EX.2: Ratio of New York wages & salaries per job to U.S., 2011, 2013 and 2015
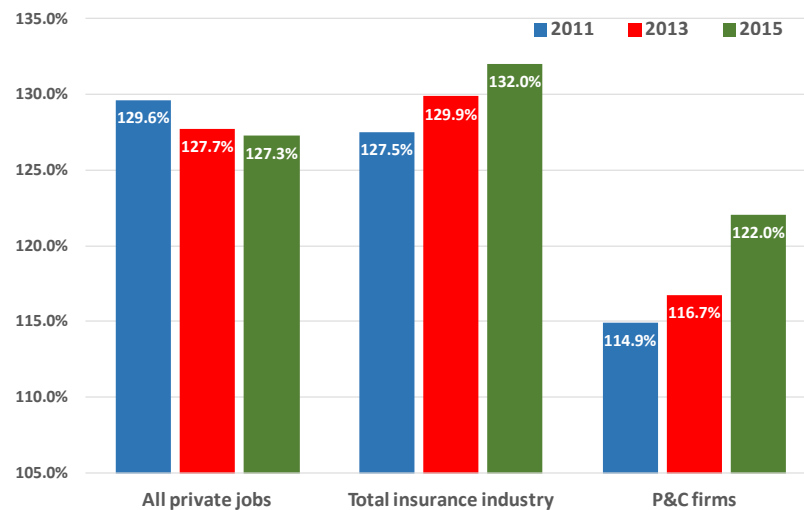
Source: Goss & Associates based on U.S. Census data

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Figures EX.1 – EX.6 summarize data and impacts by year of New York's P&C industry

Figure EX.3: Impact of P&C industry on New York, 2016-2020 (billions of 2017 dollars)
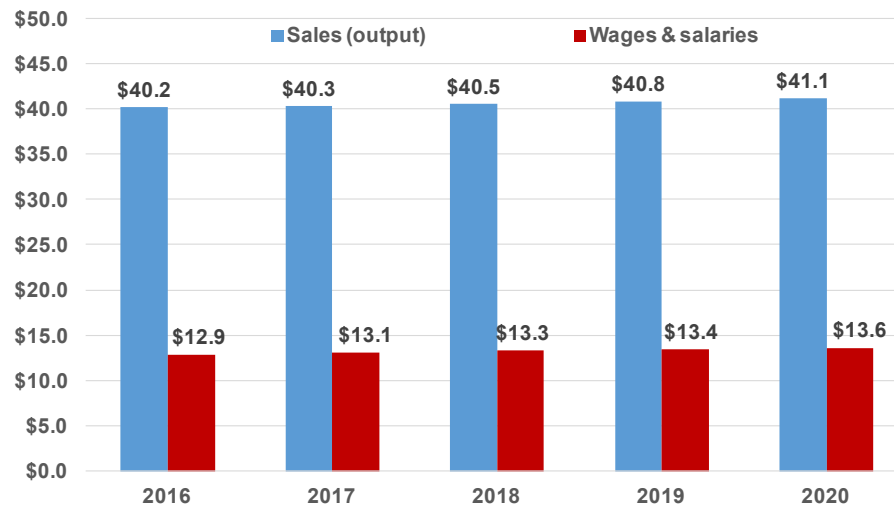
Source: Goss & Associates based on IMPLAN models

Figure EX.4: Impacts of the P&C industry on New York jobs, 2016-2020 (in number of jobs)
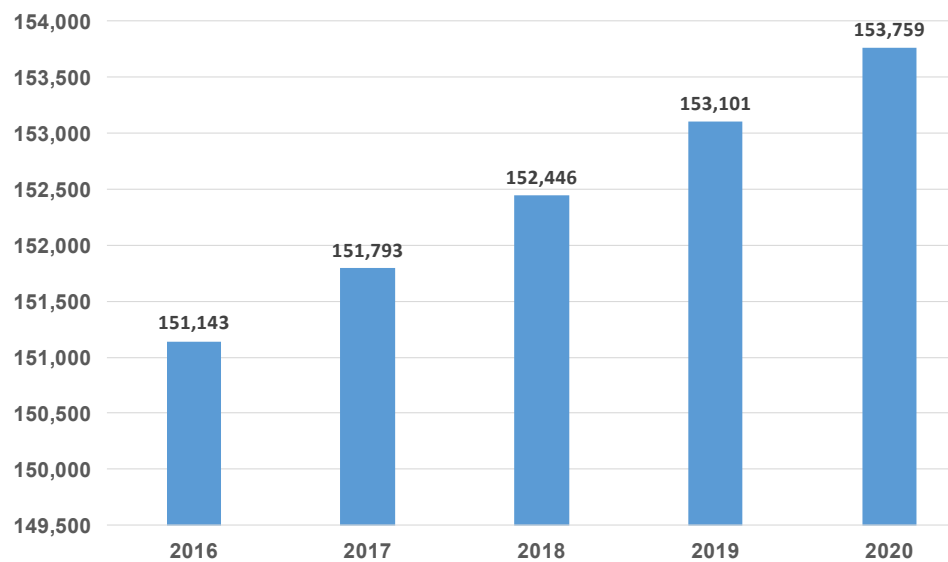
Source: Goss & Associates based on IMPLAN models

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Figure EX.5: Impact of P&C industry on New York state and local taxes (billions of 2017 dollars)
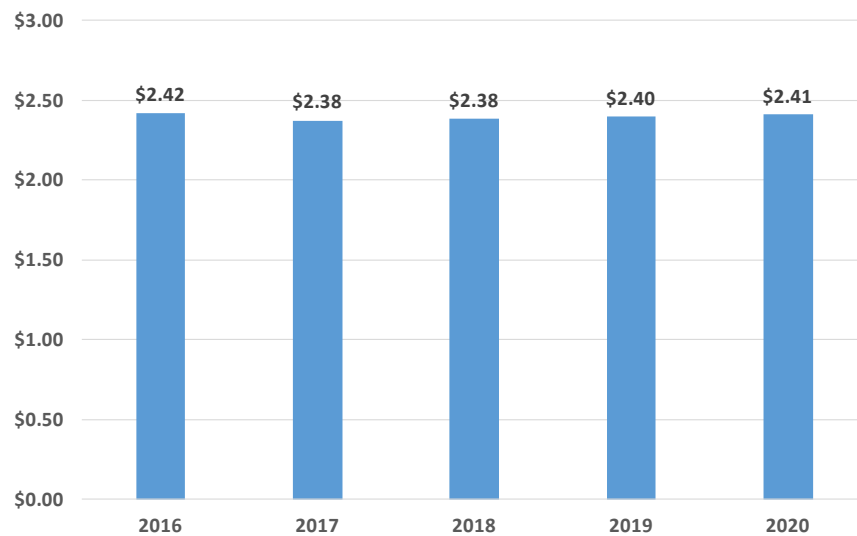
Source: Goss & Associates based on IMPLAN models

Figure EX.6: Impact of P&C industry on New York self-employment income, 2016-2020 (billions of 2017 dollars)
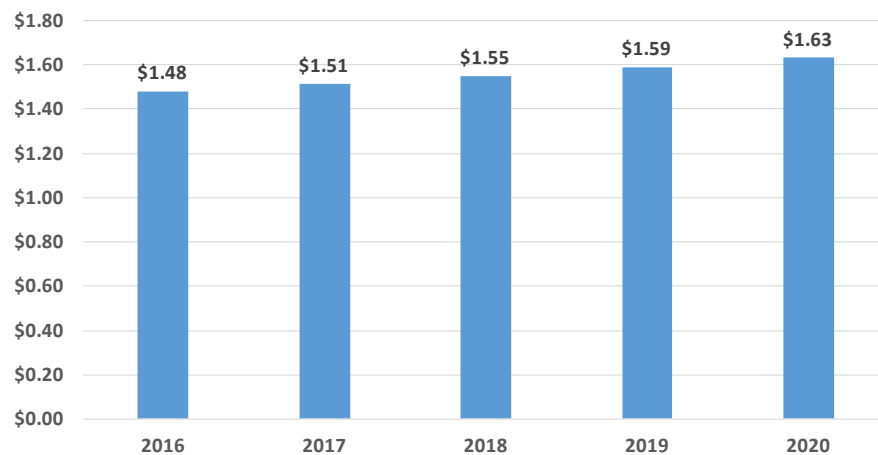
Source: Goss & Associates based on IMPLAN models

Executive Summary

III. Insurance Industry Performance

New York's insurance industry has been a high-wage, high-productivity growth industry. Wages and salaries and job performance data show that:

o As a result of insurance productivity growth, U.S. households were able to reduce insurance spending by approximately three dollars per $1,000 of total spending over the past 10 years.

o Over the last decade, New York's productivity growth in the insurance sector was 2.33 times that of the overall U.S. insurance industry.

o Average 2015 weekly wages were $764 higher in the New York insurance industry than the state average.

o Between 2007 and 2017, insurance wage growth was 29.5 percent compared to total private industry wage growth of 25.6 percent.

o Employment in the insurance industry for the 10 years ending in 2024 is expected to grow by 6.1 percent, in-line with the 6.5 percent growth expectation for total employment.

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IV. State Competition for Insurance Jobs

- From 2005 to 2015, national employment at insurance carriers grew by 84,609 workers.

- Over one-in-four of these jobs were located in Texas (26.8 percent). Meanwhile, Florida, Ohio and Tennessee each added over 10,000 workers.

- New York was just outside of the top ten states for employment growth at number 11, adding 4,305 insurance jobs.

- Statistical analysis reveals that if employment at New York insurance carriers grew at a rate equal to growth in total employment at the national level, New York would have added 6,626 jobs for insurance carriers.

- In addition, New York's decline in its relative competitive position in the insurance industry resulted in an additional loss of 1,665 workers.[5]

> New York was just outside of the top ten states for employment growth at number 11, adding 4,305 insurance jobs from 2005-2015.

V. P&C's Impact on New York's Municipal Bond Market

- Most recent data show that the P&C industry invested 34.7 percent in 2015 and 33.0 percent in 2016 of its fixed income investment portfolio in state and local municipal bonds.

- P&C companies are consistently one the largest purchasers of municipal bonds in the country, having been the fourth largest in 2015 and 2016. In 2016, only households, mutual funds and commercial banks exceeded P&C companies' purchases of municipal bonds.[6]

- By increasing the demand for municipal bonds, P&C bond purchases support higher prices and lower interest rates on municipal bonds, producing significant savings for the New York taxpayer.

- P&C municipal bond purchases in New York over the past ten years lowered interest rates on bond issuances by an average of 45 basis points, or almost one-half of one percentage point.

- Between 2006 and 2015, P&C purchases of municipal bonds saved the New York taxpayer an average of $153.6 million annually, or a total of $1.5 billion.

> Between 2006 and 2015, P&C purchases of municipal bonds saved the New York taxpayer an average of $153.6 million annually, or a total of $1.5 billion.

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[5] Alternatively, this loss may be the result of higher productivity growth in New York's insurance industry.

[6] It should be noted that P&C employee purchases of municipal bonds are included in both households and mutual funds.

Executive Summary

V.   InsurTech and the Competition for Millennials[7]

- Millennials, (individuals born between 1980 and 2000) have surpassed baby boomers as the largest share of the U.S. population.

- Millennials expect services that are characterized by convenience and speed.

  o As this group takes more prominent role as a consumer of insurance services, the potential exists for profound changes to occur in the industry.

  o The ability for the insurance industry to adapt its operations will determine how well and to what extent it will meet the expectations of this significant block of consumers.

- This expectation for a more customer-centric approach to transactions and services is re-shaping the nature of financial services.

  o For insurance services, InsurTech represents potential innovation and disruption at the nexus of insurance and information technology.

  o Early adopters have begun the process of modifying their business models to incorporate IT-driven innovation and identifiable trends have begun to emerge.

  o PwC (PricewaterhouseCoopers) recently released results of a global survey of financial services companies including insurance companies. Trends identified include:

    - **Self-directed services:** Identified as the most important trend, PwC reports that the sector is investing in design and implementation of more self-directed services for customer acquisition and servicing.

    - Emerging trend in **usage-based insurance (UBI):** Innovators may move beyond granular risk modeling based on driving and behavioral variables to using UBI to satiate specific new customer demand, e.g. policy demand for a low mileage driver. Telematic-based solutions allow for pay-as-you-drive auto insurance and the trend is gaining momentum.

    - **Data capture and analytics:** Real-time remote access of data combined with the ability to perform timely analysis presents a third trend developing in the industry. Drones, sensors and wearables are just a few of the devices that could generate data for deep risk insights in a commercial, industrial or residential setting.

    - **More granular data:** Development of more granular-level data offer a competitive advantage for existing firms, providing more precise risk and pricing strategies for both existing and new markets.

  o For existing firms, PwC suggests identifying and refining "value propositions where experience transaction efficiency and transparency are key elements. As self-directed solutions emerge among competitors, the ability to differentiate will be a challenge."

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[7]PwC Global FinTech Report (2016). Accessed at: https://www.pwc.se/sv/pdf-reports/blurred-lines-how-fintech-is-shaping-financial-services.pdf.

Section 1 - New York's Insurance Industry: An Economic Bonus for the State of New York

Chapter Highlights[8]

New York's insurance industry has been a high-wage, high-productivity growth industry.

- **Wages and salaries and job performance data show that:**

  o Over the last decade, New York's productivity growth in the insurance sector was 2.33 times that of the overall U.S. insurance industry.

  o Average 2015 weekly wages were $764 higher in the New York insurance industry than the state average.

  o Between 2007 and 2017, insurance wage growth was 29.5 percent compared to total private industry wage growth of 25.6 percent.

  o Employment in the insurance industry for the 10 years ending in 2024 is expected to grow by 6.1 percent, in-line with the 6.5 percent growth expectation for total employment.

  o As a result of insurance productivity growth, U.S. households were able to reduce insurance spending by approximately three dollars per $1,000 of total spending over the past 10 years.

Insurance Jobs: An Economic Bonus for the State of New York

Figure 1.1 shows New York's share of U.S. jobs by sector. New York maintains a significant share of total U.S. private employment, with a 6.4 percent share in 2015. Likewise, the share of total U.S. insurance employment in the state has remained relatively consistent over the past 5 years at between 6.7 percent and 6.8 percent. During 2015, however, the share of New York's P&C employment edged downwards to 5.8 percent of total U.S. P&C employment.

Figure 1.1: New York's share of U.S. jobs by industry, 2011, 2013, and 2015
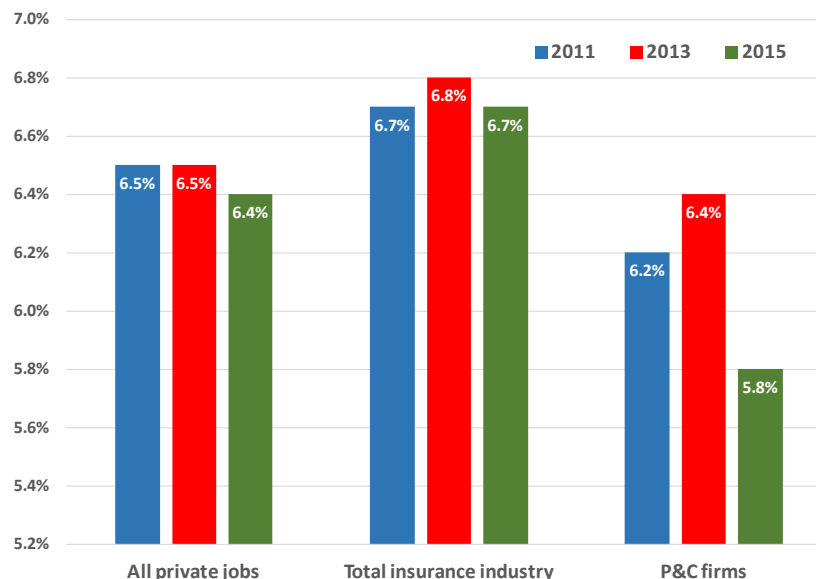
Source: Goss & Associates based on U.S. Census data

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[8]This chapter discusses all New York's insurance sectors, including P&C.

Figure 1.2 shows the ratio of New York to U.S. payroll per job. Wage and salary income per worker in New York remains well above the national average. In 2015, New York's private sector workers received approximately 27.3 percent more income than the average U.S. employee. The gap between New York's private sector workers and the nation has narrowed, slightly, over the past 5 years.

Workers in New York's insurance industry saw their wage and salary income increase relative to the nation. Employees in the insurance industry receive, on average, income that is 32.0 percent greater in New York compared to the nation. For P&C workers, the gap increased significantly in 2015 to 22.0 percent from 16.7 percent in 2013.

Figure 1.2: Ratio of New York to U.S. wages & salaries per job, 2011, 2013 and 2015
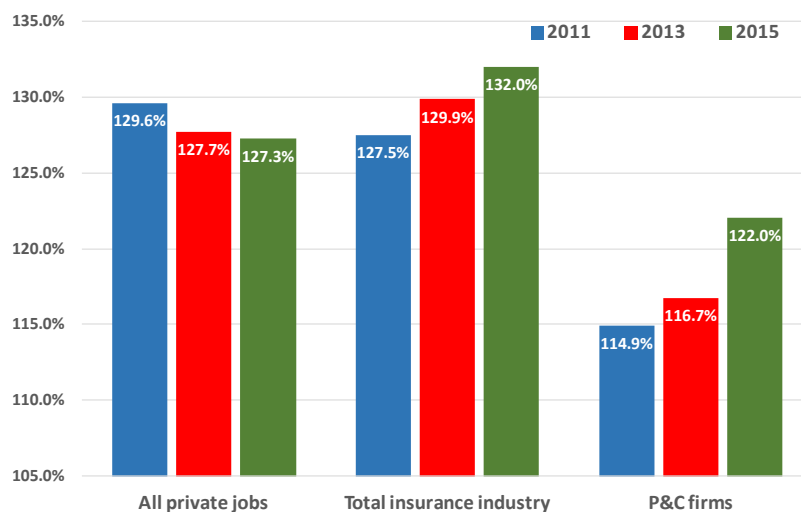
Source: Goss & Associates based on U.S. Census data

The insurance industry continues to outperform other industries in the U.S. Table 1.1 compares the 2000 to 2015 growth in overall U.S. jobs and insurance jobs. During this time period, data show that payroll per U.S. insurance worker advanced by 66.7 percent while growing by a much lower 48.2 percent for all U.S. workers. In the P&C sector, the growth was also significant for P&C employees, growing by 66.5 percent between 2000 and 2015.

Table 1.1: U.S. private jobs, payroll and payroll per worker, 2000-2015			
U.S.	2000	2015	Growth
All sectors			
Jobs	114,064,976	124,085,947	8.8%
Payroll	$3,879,430,052,000	$6,253,488,252,000	61.2%
Pay per worker	$34,011	$50,396	48.2%
Finance and insurance			
Jobs	5,963,426	6,135,914	2.9%
Payroll	$346,805,452,000	$595,764,578,000	71.8%
Pay per worker	$58,155	$97,095	67.0%
Insurance			
Jobs	2,290,162	2,453,404	7.1%
Payroll	$108,073,377,000	$192,993,039,000	78.6%
Pay per worker	$47,190	$78,663	66.7%
Property and casualty			
Jobs	609,431	550,673	-9.6%
Payroll	$31,087,509,000	$46,783,132,000	50.5%
Pay per worker	$51,011	$84,956	66.5%
Source: U.S. Census Bureau, County Business Patterns			

Table 1.2 provides further detail on the wages by sector of U.S. insurance. As listed, 2017 average weekly wages were $419 higher in the insurance industry than the average for all private workers. Furthermore, between 2007 and 2017, insurance wage growth was 29.5 percent, whereas total private industry wage growth was a lower 25.6 percent.[9]

Table 1.2: Average weekly salaries by U.S. industry, 2007 and 2017, 2007-2017 growth			
Industry	Average wage*		Growth
	2007	2017	2007-2017
Insurance industry (overall)	$1,012	$1,310	29.5%
Insurance carriers	$1,065	$1,415	32.8%
Direct life & health insurance	$1,052	$1,417	34.6%
Reinsurance	$1,626	$2,163	33.0%
Insurance agencies	$927	$1,109	19.7%
Financial activities	$957	$1,274	33.1%
Nondurable manufacturing	$767	$957	24.7%
Durable goods manufacturing	$898	$1,135	26.4%
Total private	$710	$891	25.6%
Source: U.S. Bureau of Labor Statistics *March (not seasonally adjusted)			

[9]https://data.bls.gov/cgi-bin/dsrv

Data also show that average weekly wages for insurance carriers were $524 per week higher than for all private workers, and approximately $141 more than the average weekly wages for workers in the nation's total financial and insurance sector. Average weekly wages for all insurance workers was $175 per week higher than the average durable goods manufacturing worker.

Productivity enhancement. Data in Tables 1.1 and 1.2 underscore the extent of wage growth and overall wages that the U.S. insurance industry has experienced over the past ten years. Productivity growth continues to be a chief contributor to these increases.

As a result, since 2005, U.S. households have been able to allocate a reduced share of their spending budgets to insurance.

Figure 1.3 profiles U.S. insurance spending per $1,000 of total spending. As shown, Americans have reduced their insurance spending from $31.71 per $1,000 of total 2005 household spending to $28.69 per $1,000 of total 2015 spending. Likewise insurance productivity growth has enabled U.S. households to reduce their spending on automobile and transportation insurance from $6.71 per $1,000 of spending in 2005 to $5.50 per $1,000 of spending in 2015.

Figure 1.3: Insurance spending per $1,000 of household spending, 2005 to 2015
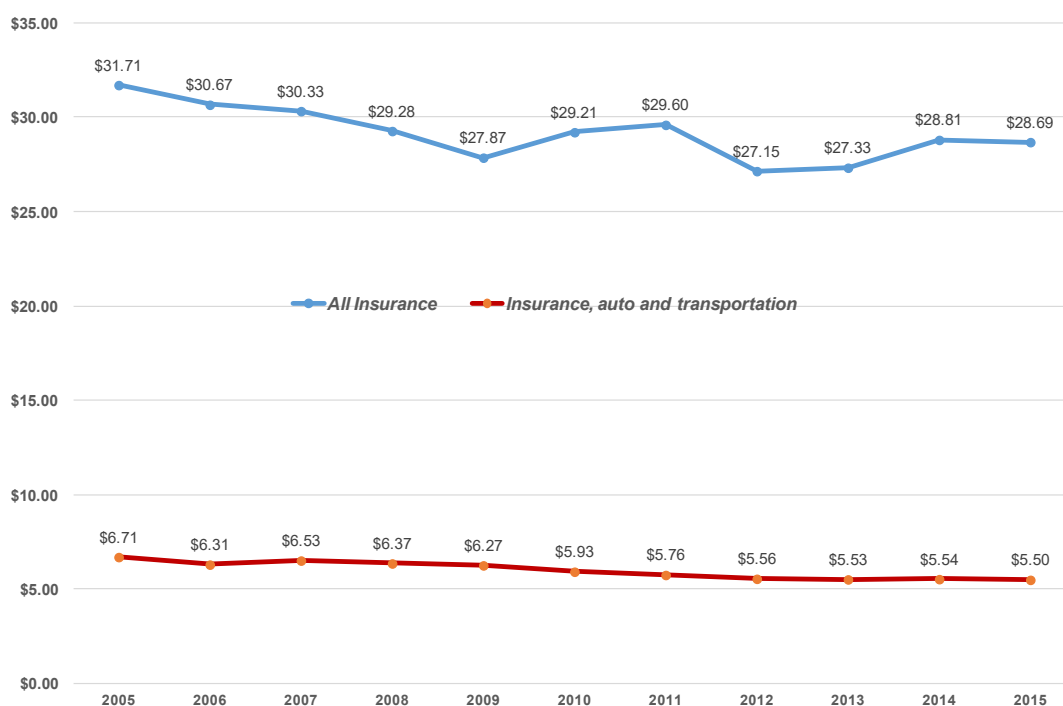
Source: Bureau of Economic Analysis and Goss & Associates

In summary, due to insurance productivity enhancements[10] and expense reductions, insurance workers have experienced higher wage and salary growth and American consumers have enjoyed relatively lower insurance premiums.

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[10]Throughout this study, the technical definition of "productivity" is used, whereby premium reductions and expense cuts per insurance worker constitute productivity growth.

Insurance Industry Employment Projections

Table 1.3 compares job growth prospects to the year 2024 for insurance sectors to overall U.S. job growth. As indicated, the overall insurance industry is expected to add jobs at a pace nearly matching the overall economy, with 2014-2024 job growth of 6.1 percent for total insurance and 6.5 percent for all U.S. industries.

Insurance agencies and brokerage firms are expected to grow at a rate of 4.8 percent. Direct insurance carriers, excluding life, health and medical, are expected to see an employment decline of 8.7 percent.

Table 1.4 shows the expected level of jobs for 2014 and 2024 along with the educational requirements. Data show that the financial services industry, which includes insurance, will provide approximately 8,486,700 positions in 2024. Importantly, data show that 78.6 percent of these jobs will require postsecondary education or training, with only 21.4 percent of these jobs open to workers with educational attainment at the high-school diploma level (or equivalent) or less.

Increasingly, as presented in Table 1.4, manufacturing and old-line service industries are being replaced by new service industries, including health services, professional & business services, and financial services.

Table 1.3: Job growth for insurance vs. all industries, 2014-24				
Industry	2014	2024	Job gains	2014-2024 Growth
Direct insurance carriers (except life, health and medical)	596,000	544,300	-51,700	-8.7%
Insurance agencies & brokerages	711,700	746,100	34,400	4.8%
Total insurance	2,467,000	2,617,400	150,400	6.1%
All U.S. industries	150,539,900	160,328,800	15,628,000	6.5%
U.S. Bureau of Labor Statistics http://data.bls.gov/projections/nationalMatrix?queryParams=524210&ioType=i http://data.bls.gov/projections/nationalMatrix?queryParams=524120&ioType=i				

Industry	Job Estimates 2014	Job Estimates 2024	Growth (%)	High school diploma or equivalent or less (%)	Postsecondary education or training (%)
Government & public education	21,863,000	22,235,700	1.7%	19.4%	80.6%
Private education services	3,417,400	3,756,100	9.9%	20.0%	80.0%
Healthcare & social assistance	18,057,400	21,852,200	21.0%	20.1%	79.9%
Information services	2,739,700	2,712,600	-1.0%	21.0%	79.0%
Financial activities (includes insurance)	7,979,500	8,486,700	6.4%	21.4%	78.6%
Professional & business services	19,096,200	20,985,500	9.9%	27.7%	72.3%
Wholesale & retail trade services	21,190,500	22,280,500	5.1%	44.0%	56.0%
Transportation & utilities services	5,193,300	5,282,000	1.7%	44.6%	55.4%
Other services	6,394,000	6,662,000	4.2%	46.5%	53.5%
Manufacturing	12,188,300	11,374,200	-6.7%	47.3%	52.7%
Leisure & hospitality	14,710,000	15,651,200	6.4%	49.8%	50.2%
Construction	6,138,400	6,928,800	12.9%	63.2%	36.8%
Natural resources	2,982,100	2,951,700	-1.0%	66.0%	34.0%

Table 1.4: Education requirements by industry to 2024

Source: U.S. Bureau of Labor Statistics; Goss and Associates

New York's Insurance Industry

The insurance industry has been an important component of the New York economy for decades, with its economic significance growing steadily each year. For example, in 1968 insurance industry payrolls accounted for 1.9 percent of total private payrolls in the state, but by 2015, the insurance industry's share had grown to 2.9 percent of total New York payrolls.[11]

Data in Table 1.5 compare job and wage growth for New York's insurance sectors to the overall New York economy between 2001 and 2015. In general, data show that New York's insurance industry has boosted jobs at a rate below that of the state, but has increased wages at a pace well above that of other industries in the state. This again buttresses the hypothesis of superior insurance productivity growth.

Still, wage growth in the insurance sector outpaced the all-industries total, with the former growing 65.6 percent and the latter growing 38.7 percent. According to the U.S. Census' County Business Patterns, average 2015 weekly wages were $764 higher in the New York insurance industry than the state average.

The growth in relative insurance industry payrolls in the state means the industry plays an increasingly important function in New York's economic growth and development as well.

As demonstrated earlier, New York's insurance industry has been a high-wage, high-productivity growth industry. Thus, historically, wage growth in the insurance industry has exceeded that of all other sectors, while employment growth for the insurance industry has lagged that of other sectors.

> Still, wage growth in the insurance sector outpaced the all-industries total, with the former growing 65.6 percent and the latter growing 38.7 percent.

[11]U.S. Bureau of Economic Analysis.

Table 1.5: Comparison of job and wage growth for New York insurance						
Industry	2001	2015	2001	2015	2001-2015	2001-2015
	Employment		Wages per job		Job growth	Wage growth
All jobs, all industries	7,428,349	7,998,994	$46,241	$64,143	7.7%	38.7%
All insurance	167,680	163,763	$62,722	$103,848	-2.3%	65.6%
Insurance carriers	105,733	103,514	$65,343	$113,930	-2.1%	74.4%
Direct life, health, medical insurance carriers	61,462	67,123	$63,395	$112,771	9.2%	77.9%
Direct life insurance carriers	36,813	34,913	$74,867	$141,166	-5.2%	88.6%
Direct health & medical insurance carriers	24,649	32,210	$46,725	$81,993	30.7%	75.5%
Other direct insurance carriers	42,006	33,920	$63,262	$105,879	-19.2%	67.4%
Direct P&C insurance carriers	38,829	32,129	$63,645	$103,681	-17.3%	62.9%
Agencies & other insurance	61,947	60,249	$58,248	$86,525	-2.7%	48.5%
Source: U.S. Census Bureau, County Business Patterns; Goss & Associates						

Table 1.6 shows the change in the number of insurance firms for New York, its neighbors and the U.S. between 2005 and 2015. As presented, none of New York's neighbors had an increase in the number of insurance firms. All of New York's neighboring states saw a net loss of firms from 2005 to 2015.

Table 1.6: Change in the number of insurance firms, 2005-2015		
State	Change in number of insurance firms 2005-2015	Growth rate
Connecticut	-55	-2.6%
Massachusetts	-140	-4.1%
New Jersey	-105	-2.6%
New York	-389	-4.1%
Pennsylvania	-14	-0.2%
Vermont	-5	-1.3%
Total U.S.	1,483	0.8%
Source: U.S. Census Bureau, County Business Patterns, 2015		

Figures 1.4 and 1.5 show the average employment size of insurance firms between 2005 and 2015 for New York and for the U.S. As presented, the average insurance firm in New York employed 17.4 in 2005 and 17.9 in 2015. On the other hand, the average U.S. insurance company employed 13.1 workers in 2005 and 13.7 in 2015.

As shown in Figure 1.5, in terms of insurance carriers, the average size of New York's insurance carriers increased from 54.9 workers in 2005 to 63.7 in 2015 while that of the U.S. insurance carriers went from 41.6 to 45.5 between 2005 and 2015.

Figure 1.4: Average number of employees per insurance firm, U.S. versus New York (2005 to 2015)

Figure 1.2: Average number of employees per insurance firm, US versus New York (2005 to 2015)

■ US   ■ New York

Year	US	New York
2005	13.1	17.4
2006	13.2	17.1
2007	12.8	16.4
2008	13.3	16.8
2009	13.1	16.4
2010	12.8	16.4
2011	12.7	16.1
2012	12.9	16.7
2013	13.3	17.1
2014	13.4	17.8
2015	13.7	17.9

Source: U.S. Census Bureau, County Business Patterns
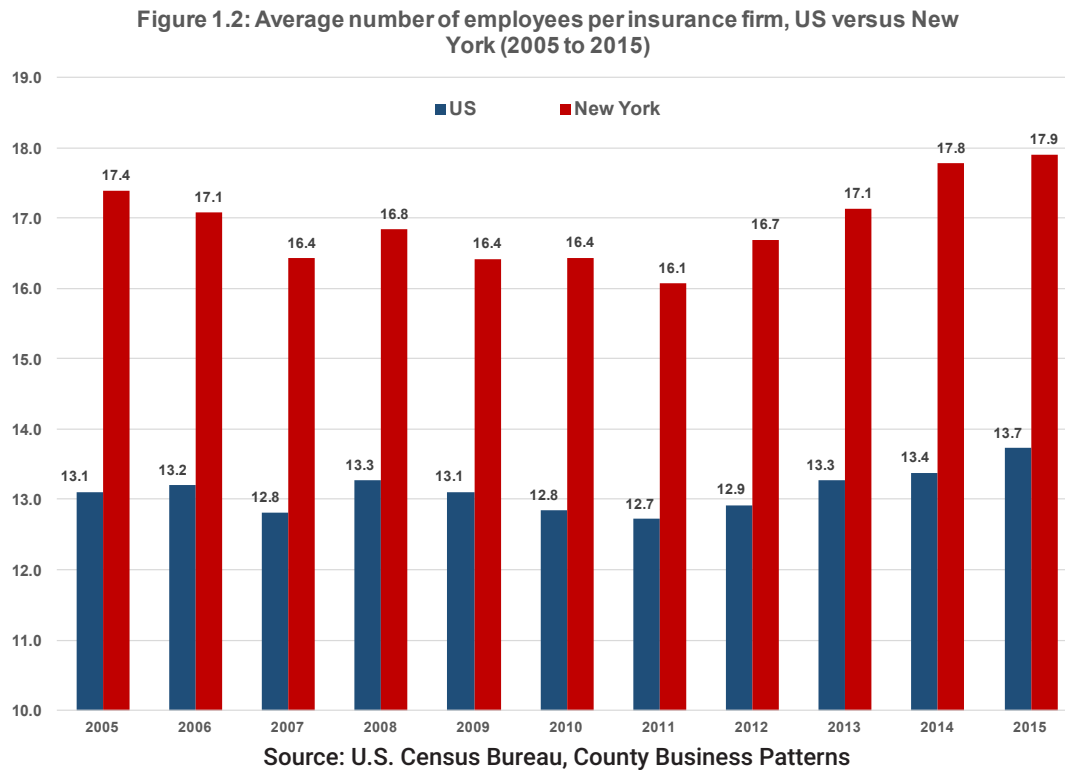
Figure 1.5: Average firm size, insurance carriers, U.S. versus New York (2005 to 2015)

Figure 1.3: Average firm size, insurance carriers, US versus New York (2005 to 2015)

■ US   ■ New York

Year	US	New York
2005	41.6	54.9
2006	41.8	52.9
2007	42.4	53.1
2008	42.6	53.7
2009	42.2	53.6
2010	42.6	56.1
2011	41.5	53.2
2012	43.8	57.9
2013	46.2	61.2
2014	43.8	61.4
2015	45.5	63.7

Source: U.S. Census Bureau, County Business Patterns
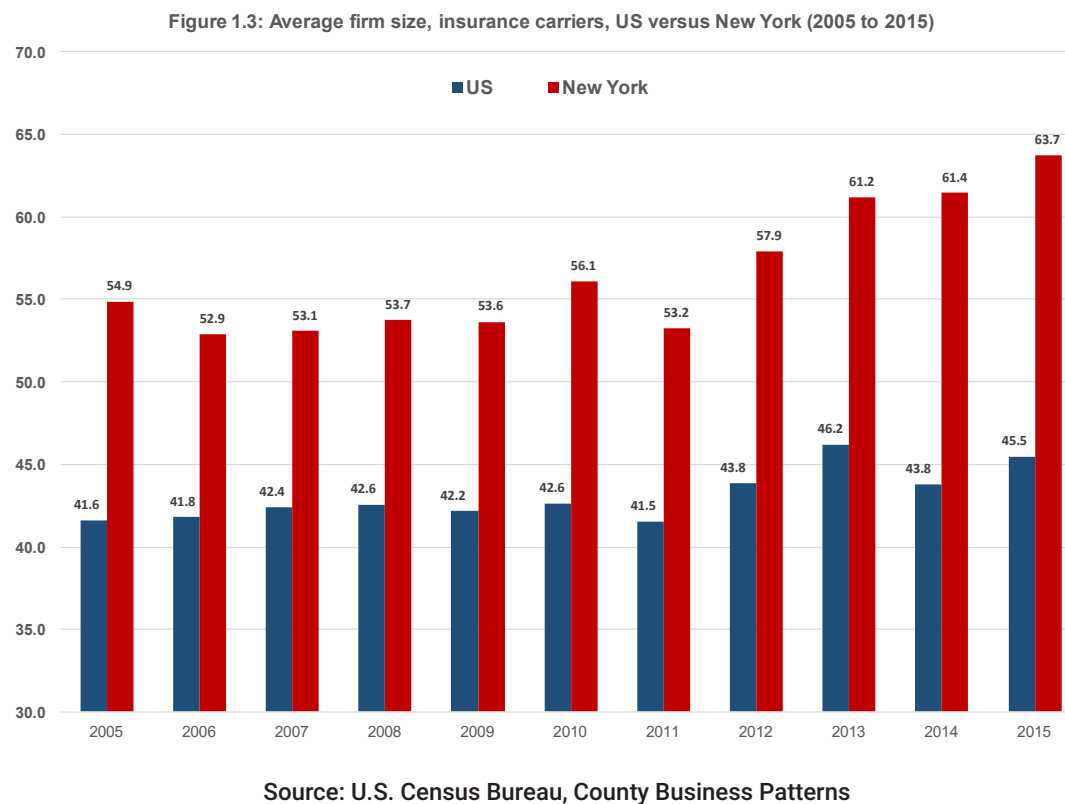
Figure 1.6 shows productivity growth for the U.S. and New York between 2004 and 2014.[12] As listed, New York lagged the U.S. with regard to private industry productivity growth, with the former increasing 1.5 percent and the latter increasing 3.5 percent; however, New York's productivity growth in the insurance industry was 2.33 times that of the U.S insurance industry.

Figure 1.6: Productivity growth, US and New York (2004 to 2014)
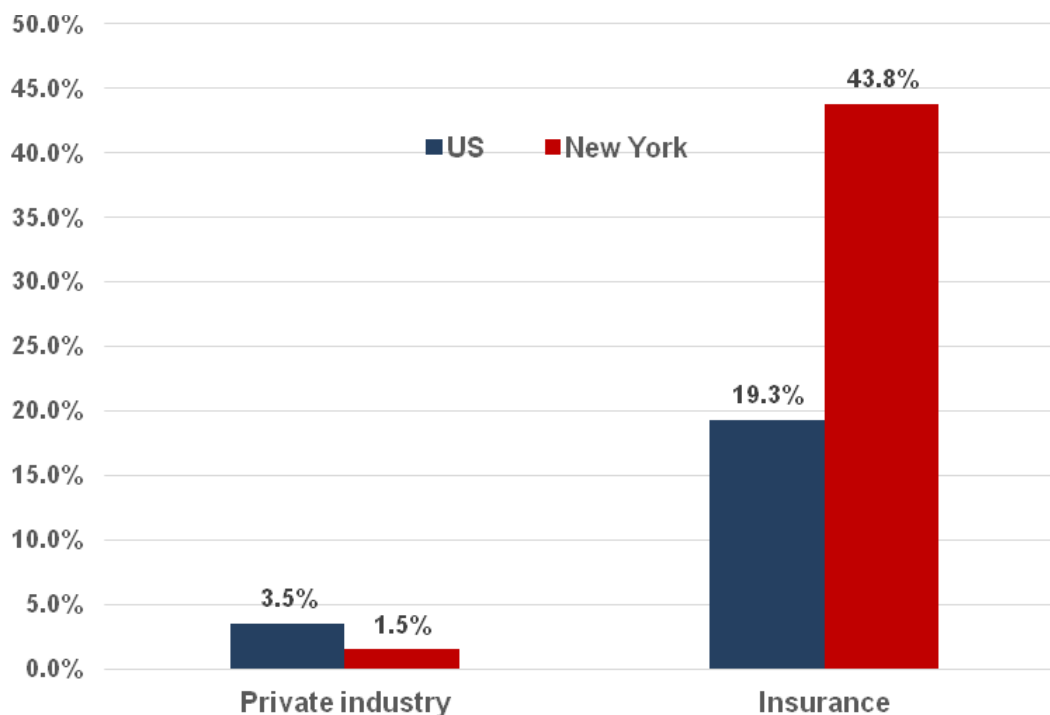
Source: U.S. Census Bureau, County Business Patterns

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[12]Productivity growth is real (inflation adjusted) GDP per worker. Technically, productivity growth is defined as GDP per hour growth. However, the number of work hours was not available for the insurance industry. GDP for the insurance industry was not available for 2015 and later at the time of the completion of this study.

Economic Competitiveness

The preceding tables and figures have spotlighted the past, present and future growth opportunities for the insurance industry. Attracting and retaining industries with relatively high-paying jobs, like insurance, remains the focus of economic developers and policy-makers across the nation. In the ever-changing competitive landscape, industry advocates and policy-makers need to understand their state's relative competitiveness compared to other states and regions.

Shift-share analysis is used to identify the relative impacts of national economic growth and state competitiveness. The use of this methodology allows one to separate the impact on state employment growth resulting from changes in national growth, industry growth, and the state's relative competitive position. Below is an analysis of New York's employment growth from 2005 to 2015 with a comparison of New York to the top ten states for net industry growth during the time period.

Table 1.7 provides a summary of the decomposition of growth by state into the growth attributable to trends in national employment, industry employment and state competitiveness. The shift-share analysis reveals that if employment at New York insurance carriers grew at a rate equal to growth in total employment at the national level, New York would have added 6,626 jobs. The relatively slower growth in the insurance-carrier industry, compared to growth in total employment, contributed a net loss in New York jobs of 657 workers. In addition, the state's relative competitive position resulted in an additional loss of 1,665 workers. The net result was job growth of 4,305 for New York from 2005 to 2015.

From 2005 to 2015, national employment at insurance carriers grew by 84,609 workers, with more than one-in-four of these jobs located in Texas (26.8 percent). Meanwhile, Florida, Ohio and Tennessee each added over 10,000 workers. New York was just outside of the top ten states for growth at number 11, adding 4,305 jobs.

Table 1.7: Decomposition of insurance carrier employment growth, top-ten states by employment growth and New York, 2005 to 2015				
	State employment growth due to:			
State	National growth	Industry growth	State's relative competitive position	Total state job gain or loss
Texas	5,957	-590	17,274	22,641
Florida	4,888	-484	8,115	12,519
Ohio	4,521	-448	6,741	10,814
Tennessee	1,601	-159	8,811	10,253
Georgia	2,561	-254	7,552	9,859
Arizona	1,856	-184	7,554	9,226
Wisconsin	3,470	-344	4,321	7,447
Kentucky	793	-79	5,315	6,029
Virginia	2,093	-207	3,261	5,147
North Carolina	1,982	-196	2,658	4,443
New York	**6,626**	**-657**	**-1,665**	**4,305**
Source: U.S. Census, County Business Patterns				

Shift-share analysis is a useful descriptive tool. However, it does not explain the causes of state's competitive stance. Differences in competitiveness can result from a number of factors, including technology, tax policy and overall business climate. This report looks at three areas of potential competitive differences:

1. The cost of doing business based on KPMG's business cost index for corporate services (professional and shared services)

2. State property and casualty premium tax rates

3. Top marginal rates on state individual income tax.

Table 1.8 provides a comparison of selected cities within the top-ten growth states and New York City and Rochester based on these factors.

Table 1.8: Competitive factors, New York versus top-ten growth states, insurance carriers					
State	KPMG cost of doing business index: corporate services (index value US = 100)	Relative cost compared to NYC (%):	Relative cost compared to Rochester (%):	State premium tax compared to NY (%)	Top state marginal individual income tax rates (%)
New York City	112.5	--	23.9%	--	8.820%
Rochester	90.8	-19.3%	--	--	8.820%
Austin, TX	91.0	-19.1%	0.2%	-20.0%	No income tax
Dallas-Fort Worth, TX	90.2	-19.8%	-0.7%	-20.0%	No income tax
Houston, TX	93.3	-17.1%	2.8%	-20.0%	No income tax
Orlando, FL	86.0	-23.6%	-5.3%	-12.5%	No income tax
Tampa, FL	86.3	-23.3%	-5.0%	-12.5%	No income tax
Cincinnati, OH	87.4	-22.3%	-3.7%	-30.0%	4.997%
Cleveland, OH	88.0	-21.8%	-3.1%	-30.0%	4.997%
Nashville, TN	85.6	-23.9%	-5.7%	25.0%	5.000%***
Atlanta, GA	89.8	-20.2%	-1.1%	12.5%	6.000%
Phoenix, AZ	88.1	-21.7%	-3.0%	-2.5%	4.540%
Madison, WI	88.9	-21.0%	-2.1%	0.0%	7.650%
Lexington, KY	82.7	-26.5%	-8.9%	0.0%	6.000%
North Virginia-Metro DC	100.8	-10.4%	11.0%	12.5%	5.750%
Richmond, VA	89.3	-20.6%	-1.7%	12.5%	5.750%
Charlotte, NC	88.7	-21.2%	-2.3%	-5.0%	5.499%
Raleigh, NC	88.0	-21.8%	-3.1%	-5.0%	5.499%
Average non-NY cities	89.0	-20.9%	-2.0%	-6.0%	--

* additional 0.4312% on premiums covering vehicles
** plus additional 0.74% on property coverage contracts
*** Tennessee only taxes interest and dividend income

Sources: KPMG, Competitive Alternatives (2016); National Association of Insurance Commissioners and The Center for Insurance Policy and Research, Retaliation Guide (2016); Tax Foundation (2017)

KPMG provides a comparison of business costs by city for business site selection professionals. Their analysis includes location-sensitive operating costs such as labor costs, utility costs and facility-lease costs. In addition, KPMG analyzes the impact of state and local taxes on business costs.

Compared to operating at a New York City location, an insurance carrier could potentially realize a cost savings of 20.9 percent, on average, at non-NYC locations. The cost savings compared to Rochester are a more modest at 2.0 percent.

State premium taxes for the property and casualty lines provide a potential advantage for the following states: Ohio (30 percent lower premium tax rate compared to New York); Texas (20 percent lower), Florida (12.5 percent lower), North Carolina (5.0 percent lower) and Arizona (2.5 percent lower).

Finally, lower marginal individual income tax rates help to attract and retain businesses and employees, growing the market and providing a labor pipeline. Given the multiple tax brackets across the states, Column (6) Table 1.8 provides a comparison of the top marginal income tax rate for each state. The reader will note that Texas, Florida and Tennessee do not tax wage income; the rate for Tennessee is for interest and dividend income only. New York's top rate is the highest, with Wisconsin placing a distant 117 basis points lower (1.17 percent).

> Compared to operating at a New York City location, an insurance carrier could potentially realize a cost savings of 20.9 percent, on average, at non-NYC locations. The cost savings compared to Rochester are a more modest at 2.0 percent.

Although other states may hold a competitive advantage with regard to the cost of doing business, New York does provide factors that warrant favorable consideration for insurance related activities. The state has a major concentration of financial sector activities. This concentration aids in recruiting new employees.

Also, New York continues to maintain an advantage in tech-related venture capital funding. Finally, New York's business incentive programs help to remove some of the cost disadvantages related to state taxes.

> New York's business incentive programs help to remove some of the cost disadvantages related to state taxes.

New York's signature economic development program provides the following benefits for a financial firm (or back office operations) creating 50 new jobs:

- A job tax credit of 6.85 percent of wages per net new job to cover a portion of the associated payroll cost.
- An investment tax credit valued at 2 percent of qualified investments.
- A research and development tax credit of 50 percent of the Federal R&D credit up to 3 percent of research expenditures in New York State.

In addition, a real property tax exemption may be available to companies locating in certain distressed areas and to regional significant projects.

The R&D tax credit is potentially valuable to the insurance industry with respect to on-going innovation necessitated by the competitive insurance landscape. Cutting-edge customer service improvements and access to information and technology create the need to constantly improve operational and service delivery processes. R&D tax credits can address some of the costs associated with these process innovations.

Business tax incentives, however, remain competitive among the states. The cities listed in Table 1.8 all remain extremely competitive and several are identified by site selection professional as favorable places for business. Each city can offer an insurance company benefits that ease the cost of doing business either as a stated target industry or by operating function.[13]

State Incentive Programs

Most incentives come in the form of grants, investment and job tax credits, job training funds and property tax exemptions. Site selection professionals, broadly speaking, tend to discount non-refundable credits and prefer up-front grants or cash for their clients. The following states provide discretionary funds that can provide the company with up-front cash to close the deal:

- Arizona Competes Fund: A deal closing fund awarding discretionary grants to companies. The company must create new jobs with wages at or above the median county wage.

- Florida High Impact Performance Incentive Grants: The state has discretionary authority to provide grants to companies in high-impact industry sectors. The company must create at least 50 full-time equivalent jobs (25 full-time equivalent jobs if a research and development facility). The minimum capital investment threshold is $50 million ($25 million if a research and development facility). Companies have 3 years to meet the investment threshold.

- In addition, Florida offers the Economic Development Transportation Fund, providing up to $3 million in discretionary grants to address transportation issues impacting a specific company's location or expansion decision.

- One North Carolina Fund (One NC): The state discretionary program offers performance-based grants to businesses that create new jobs and make capital investments. Funds must be used for the purchase or installation of equipment, repairs to or construction of facility, or for infrastructure improvements.

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- Tennessee FastTrack Infrastructure Program: The state provides discretionary grants to local communities for public infrastructure improvements that will benefit at least one company that has committed to creating net new full-time jobs and making a capital investment in a business facility. Also, Tennessee maintains an economic development fund that provides discretionary grants to local government agencies to reimburse a company for project-related expenditures that are not covered by grants offered by the FastTrack Infrastructure.

- Texas Enterprise Fund: The state can offer discretionary cash grants to businesses that create at least 25 new jobs in rural areas or 75 jobs in metropolitan areas. To qualify, the company must offer wages for the jobs above the average wage in the county where the facility is located.

- Virginia Commonwealth's Opportunity Fund: The Governor has the discretionary authority to provide incentives in competitive situations where Virginia is competing against other states for business attraction and expansion projects.

- New York offers the Empire State Development program that provides discretionary grants to business attraction, expansion, and retention projects. Grant amounts depend on the level of investment, jobs and location.

- Like the cities in New York, nearly all of the states listed in table 1.6 offer research and development tax credits (either refundable or non-refundable).

- States such as Connecticut, Indiana, Maryland, North Carolina, Pennsylvania, South Carolina and Virginia continue to offer companies the opportunity to monetize tax credits against insurance premium and license taxes.

[13]Area Development, Top States for Business. http://www.areadevelopment.com/Top-States-for-Doing-Business/q3-2016/survey-results-top-states-analysis-676777.shtml

InsurTech and the Competition for Millennials

The behavior and the expectations of the typical insurance services customer are changing significantly. Millennials (individuals born between 1980 and 2000) expect services that are characterized by convenience and speed.

As this group takes a more prominent role as consumers of insurance services, the potential exists for profound changes to occur in the industry. The ability for the insurance industry to adapt its operations will determine how well and to what extent it will meet the expectations of this significant block of consumers.

This expectation for a more customer-centric approach to transactions and services is re-shaping the nature of financial services. Banking and payment systems have been at the forefront of innovation in financial services, with new technologies and start-ups disrupting established systems and companies. Disruption is now coming to other areas in the financial services sector.

For insurance services, InsurTech represents potential innovation and disruption at the nexus of insurance and information technology. Early adopters have begun the process of modifying their business models to incorporate IT-driven innovation and identifiable trends have begun to emerge. PwC (PricewaterhouseCoopers) recently released results of a global survey of financial services companies; their survey included respondents in the insurance services sector.

PwC's Global FinTech Report (2016) highlights key trends for insurance service firms and their adoption of information-technology driven innovation.[14] These trends include the following:

- **Self-directed services:** Identified as the most important trend, PwC reports the sector is investing in design and implementation of more self-directed services for customer acquisition and servicing. These efforts enhance operational efficiencies and address the millennials' demand for mobile and online services.

- **Usage-based insurance (UBI):** Innovators may move beyond granular risk modeling based on driving and behavioral variables to using UBI to satiate specific new customer demand, e.g. policy demand for a low mileage driver. PwC sees an emerging trend in usage-based insurance. Telematic-based solutions allow for pay-as-you-drive auto insurance, and the trend is gaining momentum. Development of more granular-level data offer a competitive advantage for existing firms, providing more precise risk and pricing strategies for both existing and new market segments.

- **Data capture and analytics:** Real-time remote access of data combined with the ability to perform timely analysis presents a third trend developing in the industry. Drones, sensors and wearables are just a few of the devices that could generate data for deep risk insights in a commercial, industrial or residential setting.

For existing firms, PwC suggests identifying and refining "value propositions where experience, transaction efficiency and transparency are key elements. As self-directed solutions emerge among competitors, the ability to differentiate will be a challenge."

Summary

New York is among the U.S. leaders in terms of wages & salaries and productivity growth within its insurance industry. Our high level view of the insurance industry in New York has demonstrated that the insurance industry is an important component of New York's economic development. Subsequent sections of this report calculate and examine the economic impact of the insurance industry on the state of New York.

Telematic-based solutions allow for pay-as-you-drive auto insurance, and the trend is gaining momentum.

[14]PwC Global FinTech Report (2016). Accessed at: https://www.pwc.se/sv/pdf-reports/blurred-lines-how-fintech-is-shaping-financial-services.pdf.

Section 2: P&C Purchases of Municipal Bonds - Benefits to New York Taxpayers

Section Highlights:

- Most recent data show that the P&C industry invested 34.7 percent in 2015 and 33.0 percent in 2016 of its fixed income investment portfolio in state and local municipal bonds.

- P&C companies are consistently one the largest purchasers of municipal bonds in the country, having been the fourth largest in 2015 and 2016. In 2016, only households, mutual funds and commercial banks exceeded P&C companies' purchases of municipal bonds.[15]

- By increasing the demand for municipal bonds, P&C bond purchases support higher prices and lower interest rates on municipal bonds, producing significant savings for the taxpayer.

- P&C municipal bond purchases in New York over the past ten years lowered interest rates on bond issuances by an average of 45 basis points, or almost one-half of one percentage point.

- Between 2006 and 2015, P&C purchases of municipal bonds saved the New York taxpayer an average of $153.6 million annually, or a total of $1.5 billion.

Introduction

P&C insurance firms' investment in state and local municipal bonds, help fund the building of roads, schools and other public projects. Through their investments in corporate equities and bonds, P&C firms provide municipalities with capital for schools, roads, research, expansions and other ventures. The municipal bond funds ensure ready availability of money to fund claims when necessary.

In addition, bond buying lowers the cost of borrowing for state and local government agencies. By competing with other buyers of municipal bonds, P&C firms increase the demand and price of the bonds.

This has the impact of lowering interest rates and borrowing costs on the bonds, producing savings to taxpayers in the state.

Municipal Bond Buying by Industry

When compared to all other investors in various classes of investments, the Federal Reserve (Fed) concluded that P&C companies are among the largest holders of municipal bonds, but rank lower in terms of holdings of corporate and foreign bond holdings and U.S. corporate equities.

> P&C bond purchases support higher prices and lower interest rates on municipal bonds, producing significant savings for the New York taxpayer.

Table 2.1 ranks purchasers of municipal bonds for 2015 and Table 2.2 ranks purchasers for 2016. As presented in Table 2.1, P&C insurance companies purchased 9.1 percent of total municipal securities in 2015, more than double the amount that life insurance firms purchased. P&C insurance companies ranked fourth in 2015. P&C purchases in 2016, presented in Table 2.2, decreased in the dollar value and as percent of the total.[16]

According to Fed data, the P&C industry distributed their fixed income investments in 2015 as follows: 34.7 percent in municipal bonds, 43.9 percent in corporate and foreign bonds, 20.4 percent in treasury/government agency bonds, and 0.9 percent in other fixed income.[17]

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[15]It should be noted that P&C employee purchases of municipal bonds are included in both households and mutual funds.

[16]Ibid.

[17]Source: Federal Reserve data: Z.1 Financial Accounts of the United States: Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts, Third Quarter 2014. Accessed at: http://www.federalreserve.gov/releases/z1/current/z1.pdf.

In 2016, the P&C industry distributed their fixed income investments in a similar fashion: 33.0 percent in municipal bonds, 44.2 percent in corporate and foreign bonds, 21.0 percent in treasury/government agency bonds, and 1.9 percent in other fixed income.[18]

Table 2.1: U.S. municipal securities and loans, 2015		
	Amount (billions)	Percent of total
Households	$1,641.1	43.2%
Mutual funds	$603.7	15.9%
Commercial banks	$498.9	13.1%
P&C insurance companies	$345.8	9.1%
Money market mutual funds	$268.4	7.1%
Life insurance companies	$171.2	4.5%
Closed-end funds	$89.5	2.4%
Brokers and dealers	$14.0	0.4%
Government sponsored enterprises	$8.2	0.2%
Savings institutions	$6.5	0.2%
Rest of the world	$149.4	3.9%
Total	$3,796.5	100.0%
Source: Calculated by Goss & Associates from Federal Reserve data.		

Table 2.2: U.S. municipal securities and loans, 2016		
	Amount (billions)	Percent of total
Households	$1,675.6	43.7%
Mutual funds	$632.2	16.5%
Commercial banks	$549.2	14.3%
P&C insurance companies	$338.5	8.8%
Life insurance companies	$179.0	4.7%
Money market mutual funds	$162.2	4.2%
Closed-end funds	$86.9	2.3%
Brokers and dealers	$21.0	0.5%
Government sponsored enterprises	$5.8	0.2%
Savings institutions	$6.8	0.2%
Rest of the world	$180.3	4.7%
Total	$3,837.4	100.0%
Source: Calculated by Goss & Associates from Federal Reserve data.		

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[18]Ibid.

Figure 2.1 compares total state and local debt to P&C municipal bond holdings between 2012 and 2016.[19] As shown, P&C firms held $337.4 billion, or 10.8 percent of total state and local debt in 2012, and $338.5 billion, or 11.0 percent of total state and local debt in 2016. As profiled, P&C firms remain a very important source of funding supporting the expansion in state and local spending and debt.

Figure 2.1: P&C municipal bonds held vs. total U.S. state and local government debt, billions of dollars
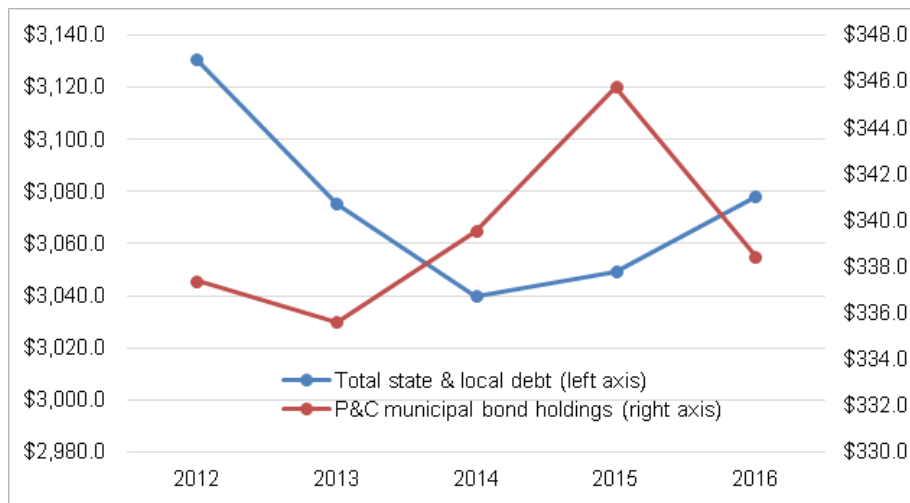
Source: Goss & Associates based on Fed data

Figure 2.2 details the areas of support by P&C purchases for 2016.[20] As shown, of P&C municipal bond purchases in 2016, 35 percent supported education spending, 3 percent underpinned utility expansions, 10 percent provided industrial aid, and 13 percent shored up transportation expenditures. The remaining 39 percent of purchases were across a broad range of state and local infrastructure spending demands.

As shown, of P&C municipal bond purchases in 2016, 35 percent supported education spending, 3 percent underpinned utility expansions, 10 percent provided industrial aid, and 13 percent shored up transportation expenditures.

Figure 2.2: Purposes of municipal bonds held by U.S. P&C industry, 2016
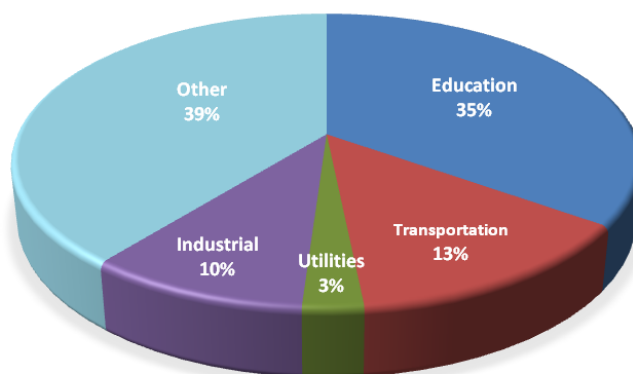
Source: Board of Governors of the Federal Reserve System

[19]Estimates by Goss & Associates based on data from the Federal Reserve.

[20]Figures reported by the Board of Governors of the Federal Reserve System, accessed at: https://www.federalreserve.gov/econresdata/releases/govsecure/govsecure20170228.htm.

Figure 2.3 shows New York's P&C industry municipal bond holdings from 2007 to 2015. The most recent peak of $32.9 billion occurred in 2008.[21]

Figure 2.3: Estimated New York P&C municipal bond holdings, 2007-2015 (in billions of dollars)
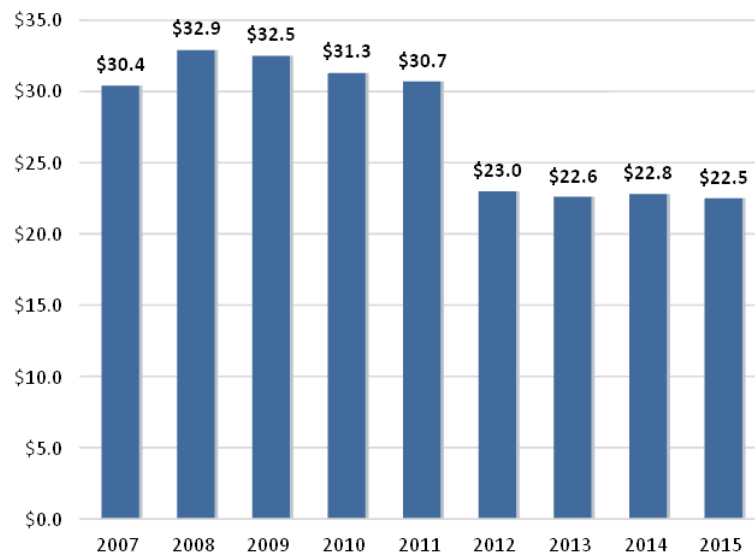
Source: Goss & Associates based on Federal Reserve Data

Much like their counterparts in other states, New York P&C firms supported a broad range of state and local government projects. According to a 2007 Insurance Research Council study, P&C insurers held more than $22 billion in New York state municipal bonds in 2005.

By purchasing municipal bonds, New York P&C firms increased the demand and prices of bonds sold both by the initial issuers and by bond holders in the secondary market for municipal bonds. This buying increased the price and reduced the yield (effective interest rate) on the municipal bonds. Figure 2.4 compares New York municipal bond yields with and without New York P&C purchases.[22]

Figure 2.4: New York municipal bond yields with and without P&C purchases, 2006-2015
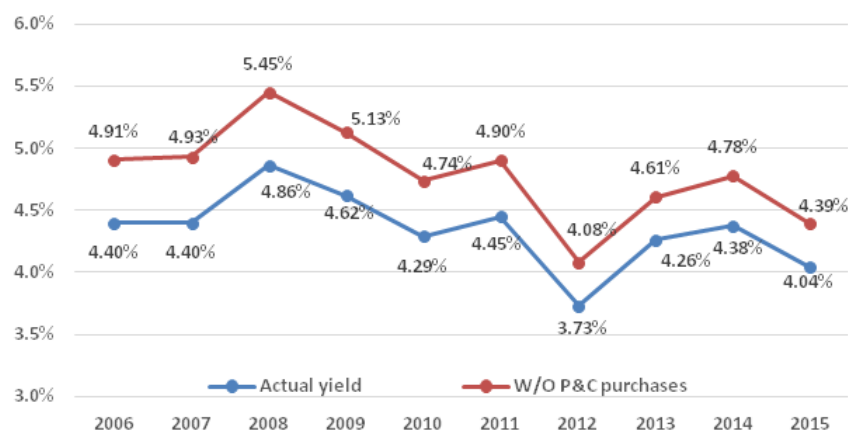
Source: Goss and Associates estimates based on Federal Reserve data

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[21] In 2005, New York's P&C industry held $22.0 billion in municipal bonds and accounted for 7.4 percent of total industry wages and salaries. By 2015, New York accounted for 6.5 percent of total industry wages and salaries and is estimated to hold $22.5 billion of total municipal bonds.

[22] It is assumed that New York P&C bond purchases were for New York state and local government agencies.

Between 2006 and 2015, the average yield on municipal bonds was 4.34 percent. It is estimated that without P&C purchases of municipal bonds, the yield on the bonds would have been 4.79 percent, an increase in costs to state and local governments of an average of 45 basis points over the ten-year period, or almost one-half of one percentage point.

The gap, or added interest rate, that would have to be paid by New York state and local government agencies would have been 47 basis points in 2006. By 2015, it is estimated that the additional interest rate charged would have declined to 33 basis points.

Applying this interest rate savings to actual bond issuances by New York state and local government agencies between 2006 and 2015 produces the actual costs and the estimated costs without P&C bond buying. The difference between the two is the savings that would accrue to the New York taxpayer.

> It is estimated that without P&C purchases of municipal bonds, the yield on the bonds would have been 4.79 percent, or an increase in costs to state and local governments of an average of 45 basis points over the ten-year period, or almost one-half of one percentage point.

As shown in Figure 2.5., estimated savings rose from $112.8 million in 2006 to a high of $179.4 million in 2008. In 2015, estimated savings totaled $165.2 million.[23] Thus over the time period 2006 to 2015, New York P&C municipal bond purchases saved the New York taxpayer $1.5 billion.

Figure 2.5: Estimated interest rate savings to New York taxpayer , 2006 – 2015, (in millions of dollars)
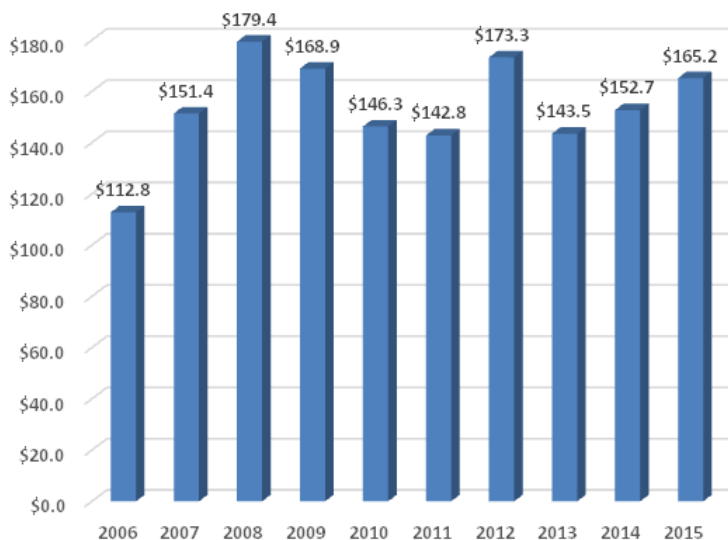
Source: Goss & Associates based on Federal Reserve Data; *The Bond Buyer*.

> Thus over the time period 2006 to 2015, New York P&C municipal bond purchases saved the New York taxpayer $1.5 billion.

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[23]Savings figures for 2012 through 2015 were estimated using bond issuance amounts reported by *The Bond Buyer*, a definitive news source on municipal bonds.

Section 3: Estimated Economic Impacts of the New York P&C Industry

Section Highlights:

- Every 1,000 New York P&C jobs support another 1,550 in non-P&C firms.

- Each New York P&C job creates approximately $40,880 in state and local taxes each year.

- The average pay supported by New York's P&C industry, both direct and indirect, was approximately $85,270 for 2016, which was 44.7 percent higher than the average for all New York jobs.

- In 2016, the P&C industry is estimated to have contributed nearly $40.2 billion to the New York economy. Independent P&C firms accounted for $23.3 billion (58.0 percent) of that total.

- In 2017, it is estimated that the P&C industry will contribute $40.3 billion to the New York economy, which is greater than the GDP of Vermont and Wyoming.

- In 2016, the P&C industry is estimated to have supported, directly and indirectly, approximately 151,143 jobs in New York, with independent P&C firms accounting for 87,663 of that total.

- For 2017, the P&C industry is estimated to support approximately 152,775 jobs in New York.

The average pay supported by New York's P&C industry, both direct and indirect, was approximately $85,270 for 2016, which was 44.7 percent higher than the average for all New York jobs.

In 2016, the P&C industry is estimated to have supported, directly and indirectly, approximately 151,143 jobs, with independent P&C firms accounting for 87,663 of that total.

Direct P&C Spending (Round 1)

The expenditures of New York P&C firms provide a source of jobs and income for residents of the state. This spending for locally-supplied goods and services consists of construction outlays, equipment and supply purchases, and spending by P&C firms and their employees. This initial spending leads to further spending for residents, with a resultant impact that is a multiple of "first round" spending. Thus, the impact of New York P&C firms continues after the initial money is spent for goods and services as it supports many enterprises and individuals that are indirectly linked to the P&C sector.

In Section 3, the impact of New York P&C firms is estimated for 2016 and projected for the period 2017-2020. Using Input-Output multipliers, the study provides sales, earnings and job impacts in addition to estimating the impact of the initial spending on state and local tax collections. Input-Output multipliers show how spending initiated in one industry, P&C insurance in this case, is filtered throughout the state economy.

For each dollar generated by P&C firms, there are direct effects for the initial spending plus spillover impacts into the rest of the state economy.

Input-Output multiplier models are the most frequently-used type of analysis tool for economic impact assessment. Input-output analysis assumes that each sector purchases products and services from other sectors and then sells its output to other sectors and/or final consumers. The multiplier system that will be used is IMPLAN.[24] This is a widely-used and accepted methodology and is described in more detail in the Appendices.

In tailoring the IMPLAN model for New York P&C spending, Goss & Associates used conservative assumptions. Impacts were calculated for five categories that reflect the contribution of New York P&C firms to the state and local economies.

- Output - contribution to overall economic activity.
- Employment - contribution to the job base.
- Wages and salaries - contribution to wages and salaries.
- Self-employment income - contribution to the income of self-employed individuals such as lawyers, accountants and barbers.
- Taxes - contribution to state and local tax collections.

The initial round or direct impacts are listed in Appendix 3.1.

Impacts are estimated for a) the state, b) individual industries, c) each New York county, d) each New York Senate district, e) each New York Assembly district and f) each regional economic development council. The results presented in this study are generated for 2016. Estimates for 2017-2020 are also provided with financial data discounted to present, or 2017, values.

Total Impact on New York Economic Activity (Rounds 2 and 3)

The first step in measuring impacts was to input 2016 P&C jobs, which are assumed to be the direct impacts,[25] into the IMPLAN Multiplier System. Table 3.1 lists total impacts which represent the direct, plus indirect and induced, impacts. As indicated, the 2016 spending generated a total of $40.2 billion in sales, approximately $12.9 billion in wages and salaries, nearly $1.5 billion in self-employment income, and supported 151,143 jobs.

Over the five-year period 2016-2020, New York P&C firms' spending will produce approximately $202.9 billion in output,[26] more than $66.3 billion in wages and salaries, approximately $7.8 billion in self-employment income,[27] and support an average of 152,448 jobs annually.

According to these estimates, the ratio of total jobs supported for every 1,000 P&C jobs for 2016 is 2.55.[28] Thus, each 1,000 P&C job supports another 1,550 jobs in spillover impacts.

> Over the five-year period 2016-2020, New York P&C firms' spending will produce approximately $202.9 billion in output, more than $66.3 billion in wages and salaries, approximately $7.8 billion in self-employment income, and support an average of 152,448 jobs annually.

[24]IMPLAN (for Impact Analyses and Planning) is a computer software package that consists of procedures for estimating local input-output models. The U.S. Forest Service, in cooperation with the Federal Emergency Management Agency and the U.S. Department of the Interior's Bureau of Land Management originally developed IMPLAN to assist in land and resource management planning. Since 1993, the Minnesota Implan Group Inc. in Stillwater, Minnesota with exclusive rights has continued development and maintenance of the IMPLAN system. This group licenses and distributes the software to users. Implan is one of the most widely used and accepted software packages for impact assessment. Goss & Associates is a licensed user of Implan.

[25]Implan allows the input of spending or job data. Normally job data are much more reliable and up-to-date than spending data and are used as input here.

[26]Output or total impacts include salary and wages, self-employment income, state and local taxes, and other indirect taxes.

[27]Self-employment income includes earnings for self-employed individuals such as attorneys, accountants and consultants.

[28]Total jobs created for 2016 was 151,143 from 59,277 P&C jobs, or a 2.55 ratio.

P&C jobs versus average New York job. As listed in Table 3.1, P&C firms supported average wages and salaries per job of $85,270 in 2016 and will support average wages and salaries per job of $87,421 from 2017 to 2020. This pay per worker is significantly higher that the state average for all New York wage and salary jobs at $58,910. That is, P&C insurance spending in New York supports jobs that provide a 44.7 percent pay advantage.[29]

Table 3.1 Estimated impacts on New York - 2016-2020 (all financial data discounted to present, or 2017, values) All P&C Firms			
	2016	2017-2020	Total impacts 2016-2020
Sales or business volume	$40,183,726,076	$162,744,090,608	$202,927,816,684
Salary and wages	$12,887,953,160	$53,422,644,550	$66,310,597,710
Self-employment income	$1,481,736,082	$6,287,254,363	$7,768,990,445
Average year-round jobs	151,143	152,775	152,448
Wages & salaries per job	$85,270	$87,421	$86,994
Source: Goss & Associates from IMPLAN Multiplier System			

Independent P&C versus captive P&C. The estimates contained in Table 3.1 are for both independent and captive P&C firms. It is estimated that independent P&C firms account for 56.9 percent of total economic activity in the P&C sector.[30] Based on this share of the market, impacts for independent P&C are listed in Table 3.2.[31,32]

Table 3.2 Estimated impacts on New York - 2016-2020 (all financial data discounted to present, or 2017, values) Independent P&C Firms			
	2016	2017-2020	Total impacts 2016-2020
Sales or business volume	$23,306,561,124	$94,391,572,553	$117,698,133,677
Salary and wages	$7,475,012,833	$30,985,133,839	$38,460,146,672
Self-employment income	$859,406,928	$3,646,607,531	$4,506,014,458
Average year-round jobs	87,663	88,610	88,420
Average salary for job supported	$85,270	$87,421	$86,994
Total state & local taxes	$1,405,491,026	$5,321,118,419	$6,726,609,446
Estimates based on independent agents writing 58.0 percent of the P&C market. ("2016 Property-Casualty Insurance Market Share Report," accessed at: http://www.independentagent.com/Resources/Research/SiteAssets/Market-ShareReport/default/2016%20 Property-Casualty%20Insurance%20Market-Final.pdf).			
Source: Goss & Associates from IMPLAN Multiplier System			

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[29]Pay for P&C linked jobs for 2016 is $85,270 compared to the average pay for all New York jobs of $58,910.

[30]Estimates based on independent agents writing 58.0% of the P&C market. ("2016 Property-Casualty Insurance Market Share Report", accessed at: http://www.independentagent.com/Resources/Research/SiteAssets/MarketShareReport/default/2016%20 Property-Casualty%20Insurance%20Market-Final.pdf

[31]Output or total impacts include salary and wages, self-employment income, and state and local taxes.

[32]Self-employment income includes earnings for self-employed individuals such as attorneys, accountants and consultants.

Impact on state and local tax collections. Through the spending related to the operations of New York P&C firms, state and local tax collections are created. Table 3.3 provides detailed estimates of the impact on state and local taxes. As indicated, the outcome will be nearly $12.0 billion in state and local tax collections between 2016 and 2020, approximately $2.4 billion of that for 2016.

U.S. Census data show that total New York state and local tax collection for 2014 were $166.1 billion. Assuming state and local tax collections expanded at the pace that New York's state and local tax collections expanded over the past 10 years, it is concluded that the P&C industry, both directly and indirectly, accounted for 1.32 percent of total state and local tax collections in 2016.[33]

Impacts by industry. Table 3.4[34] lists impacts by industry for 2016. As indicated, the top industries to experience spillover sales or output impacts, outside of insurance carriers and insurance agencies and brokerages, were the real estate industry with nearly $1.1 billion, depository credit intermediation firms with $638.5 million, and private hospitals with $630.1 million in total impacts or sales/revenues.

According to estimates contained in Table 3.4, jobs supported by P&C spending earned an average of $217,776 in securities and commodities trading, $153,933 in electric power generation, and $109,088 in credit intermediation in 2016. Furthermore, each New York P&C job, both directly and indirectly, creates approximately $40,880 in state and local taxes each year.[35]

Table 3.3: Impact on New York state and local tax collections, 2016-2020 (discounted to present, or 2017, value)			
	2016	2017-2020	Total impacts 2016-2020
Sales	$567,011,318	$2,240,666,486	$2,807,677,804
Individual income	$530,104,274	$2,087,272,276	$2,617,376,550
Corporate income	$318,880,930	$1,260,064,426	$1,578,945,356
Property	$705,922,002	$2,789,474,584	$3,495,396,586
Other	$301,341,865	$1,188,462,458	$1,489,804,323
Total state and local tax collections	$2,423,260,389	$9,565,940,230	$11,989,200,619
Source: Goss & Associates from IMPLAN Multiplier System			

The top industries to experience spillover sales or output impacts, outside of insurance carriers and insurance agencies and brokerages, were the real estate industry with approximately $1.1 billion, banks and credit intermediation firms with $638.5 million, and private hospitals with $630.1 million in total impacts or sales/ revenues.

[33]Between 2004 and 2014, New York state and local tax collections expanded by a compound annual rate of 5.1 percent.

[34]Equal to total wages and salaries per year divided by jobs supported.

[35]State and local taxes of $$2,423,260,389 for 59,277 direct P&C jobs.

Table 3.4: Impacts to the state of New York by industry (top 20 industries) 2016 only (2017 dollars)					
Industry	Output	Wages & salaries	Self-employment income	Jobs	Wages & salaries per job
Insurance carriers	$19,828,150,570	$3,801,840,357	$82,689,410	33,676	$112,895
Insurance agencies, brokerages, and related activities	$8,008,367,539	$4,866,305,964	$782,221,653	45,208	$107,642
Real estate establishments	$1,061,917,996	$97,926,521	$19,188,800	3,959	$24,735
Monetary authorities and depository credit intermediation activities	$638,519,657	$113,161,868	--	1,037	$109,088
Private hospitals	$630,095,959	$312,453,945	$2,873,509	3,601	$86,765
Offices of physicians, dentists, and other health practitioners	$510,675,197	$216,649,949	$78,270,033	3,174	$68,268
Food services and drinking places	$468,300,053	$163,202,795	$10,456,465	6,265	$26,049
Legal services	$405,442,057	$125,271,632	$57,863,023	1,352	$92,690
Non-depository credit intermediation and related activities	$395,445,536	$207,997,237	$22,867,308	1,490	$139,613
Telecommunications	$387,744,168	$68,632,270	$3,794,027	618	$111,118
Wholesale trade businesses	$334,075,053	$171,131,119	$17,200,604	1,924	$88,960
Funds, trusts, and other financial vehicles	$321,438,126	$38,554,472	$43,578,818	452	$85,215
Accounting, tax preparation, bookkeeping, and payroll services	$305,332,400	$90,984,657	$46,469,009	1,314	$69,243
Employment services	$281,109,130	$188,029,231	$22,670,311	4,387	$42,860
Securities, commodity contracts, investments, and related activities	$273,010,740	$389,529,665	-$23,734,487	1,789	$217,776
Management, scientific, and technical consulting services	$200,350,011	$88,773,455	$37,623,183	839	$105,871
Nursing and residential care facilities	$188,802,520	$96,832,104	4219556.191	2,166	$44,711
Other state and local government enterprises	$186,567,796	$53,106,416	--	548	$96,861
Private junior colleges, colleges, universities, and professional schools	$180,249,498	$87,671,489	$2,825,195	1,355	$64,720
Electric power generation, transmission, and distribution	$160,843,987	$35,301,211	$4,601,489	229	$153,933
All other industries	$5,417,288,084	$1,674,596,799	$266,058,176	35,762	$46,827
Total	$40,183,726,076	$12,887,953,160	$1,481,736,082	151,143	$85,270 (avg)
Source: Goss & Associates from IMPLAN Multiplier System					

Impacts by New York county. Table 3.5 lists overall, or output, impacts by county. As presented, New York County received the largest total impact of $12.5 billion and Nassau County experienced the second largest total impact at approximately $8.0 billion. At the other end of the spectrum, the smallest output impacts were experienced by Hamilton County with $1.7 million and St. Lawrence County with $2.3 million. Tables 3.6 through 3.8 present impacts by county in terms of wages and salaries, self-employment income, and jobs respectively.

Table 3.5: Total impacts of P&C industry by county, 2016 (in 2017 dollars)			
Albany	$1,635,279,529	Niagara	$49,589,708
Allegany	$15,416,853	Oneida	$712,134,698
Bronx	$442,711,705	Onondaga	$1,528,485,845
Broome	$90,274,375	Ontario	$37,842,714
Cattaraugus	$15,320,286	Orange	$106,690,945
Cayuga	$54,401,250	Orleans	$77,095,433
Chautauqua	$39,565,292	Oswego	$66,729,631
Chemung	$169,223,011	Otsego	$22,007,104
Chenango	$291,477,925	Putnam	$35,862,200
Clinton	$23,257,234	Queens	$590,388,566
Columbia	$22,766,358	Rensselaer	$58,002,570
Cortland	$25,479,563	Richmond	$97,001,878
Delaware	$17,961,873	Rockland	$339,186,723
Dutchess	$268,183,716	Saratoga	$21,397,137
Erie	$4,783,215,740	Schenectady	$1,084,105,155
Essex	$6,806,475	Schoharie	$42,623,518
Franklin	$17,336,157	Schuyler	$29,417,858
Fulton	$29,332,893	Seneca	$3,258,360
Genesee	$23,098,038	St. Lawrence	$2,273,812
Greene	$21,539,236	Steuben	$24,411,032
Hamilton	$1,665,693	Suffolk	$2,177,076,198
Herkimer	$14,749,532	Sullivan	$90,191,770
Jefferson	$72,717,535	Tioga	$13,563,179
Kings	$780,116,809	Tompkins	$135,524,225
Lewis	$25,988,702	Ulster	$108,935,223
Livingston	$16,762,484	Warren	$326,706,228
Madison	$27,155,157	Washington	$50,886,891
Monroe	$1,085,520,178	Wayne	$61,438,498
Montgomery	$58,250,033	Westchester	$1,631,339,565
Nassau	$8,021,816,090	Wyoming	$12,656,395
New York	$12,545,525,403	Yates	$3,987,891
Total all counties		$40,183,726,076	
Source: Goss & Associates from IMPLAN Multiplier System			

Table 3.6: Wages & salaries impact of P&C industry by New York county, 2016 (in 2017 dollars)			
Albany	$412,012,890	Niagara	$16,227,187
Allegany	$3,346,199	Oneida	$119,070,438
Bronx	$41,669,210	Onondaga	$458,873,635
Broome	$20,716,562	Ontario	$7,562,583
Cattaraugus	$3,692,842	Orange	$27,579,979
Cayuga	$6,034,853	Orleans	$25,007,126
Chautauqua	$6,589,323	Oswego	$10,716,378
Chemung	$30,054,792	Otsego	$7,543,244
Chenango	$41,405,990	Putnam	$9,195,870
Clinton	$4,741,987	Queens	$144,429,071
Columbia	$3,422,434	Rensselaer	$23,908,537
Cortland	$9,655,185	Richmond	$22,555,158
Delaware	$3,047,435	Rockland	$84,033,801
Dutchess	$76,506,202	Saratoga	$3,504,067
Erie	$1,247,741,042	Schenectady	$192,854,270
Essex	$1,637,011	Schoharie	$19,363,508
Franklin	$4,556,016	Schuyler	$6,452,202
Fulton	$5,435,168	Seneca	$523,009
Genesee	$5,297,090	St. Lawrence	$441,740
Greene	$6,949,640	Steuben	$7,842,882
Hamilton	$70,353	Suffolk	$572,092,789
Herkimer	$3,207,450	Sullivan	$12,593,927
Jefferson	$13,900,612	Tioga	$2,648,154
Kings	$140,552,216	Tompkins	$28,457,636
Lewis	$3,119,736	Ulster	$35,680,215
Livingston	$2,083,216	Warren	$55,260,242
Madison	$6,688,312	Washington	$4,917,711
Monroe	$341,028,847	Wayne	$7,784,861
Montgomery	$9,003,347	Westchester	$564,122,771
Nassau	$2,182,136,989	Wyoming	$2,330,935
New York	$5,776,368,646	Yates	$1,707,639
Total all counties		$12,887,953,160	
Source: Goss & Associates from IMPLAN Multiplier System			

Table 3.7: Self-employment income impacts P&C industry by New York county, 2016 (in 2017 dollars)			
Albany	$30,406,896	Niagara	$798,527
Allegany	$1,662,837	Oneida	$7,070,210
Bronx	$19,421,396	Onondaga	$14,541,432
Broome	$3,159,121	Ontario	$2,623,919
Cattaraugus	$2,251,728	Orange	$4,143,009
Cayuga	$2,099,846	Orleans	$6,343,298
Chautauqua	$3,368,736	Oswego	$2,851,051
Chemung	$3,456,738	Otsego	$340,446
Chenango	$2,318,255	Putnam	$2,713,302
Clinton	$1,810,231	Queens	$13,144,973
Columbia	$3,207,406	Rensselaer	$1,783,206
Cortland	$1,667,944	Richmond	$6,945,269
Delaware	$3,284,136	Rockland	$56,297,266
Dutchess	$15,255,598	Saratoga	$1,793,626
Erie	$45,408,406	Schenectady	$21,584,113
Essex	$1,226,383	Schoharie	$574,361
Franklin	$482,833	Schuyler	$443,705
Fulton	$1,592,007	Seneca	$1,234,296
Genesee	$1,673,756	St. Lawrence	$387,871
Greene	$378,110	Steuben	$460,531
Hamilton	$1,118,580	Suffolk	$87,072,842
Herkimer	$1,725,904	Sullivan	$2,119,227
Jefferson	$3,332,068	Tioga	$1,254,843
Kings	$79,614,647	Tompkins	$2,391,341
Lewis	$2,657,604	Ulster	$1,478,078
Livingston	$1,316,645	Warren	$4,579,948
Madison	$3,607,825	Washington	$4,991,675
Monroe	$39,377,399	Wayne	$3,244,764
Montgomery	$2,929,672	Westchester	$129,352,990
Nassau	$380,367,731	Wyoming	$1,330,700
New York	$437,596,522	Yates	$68,303
Total all counties		$1,481,736,082	
Source: Goss & Associates from IMPLAN Multiplier System			

Table 3.8: Job impact of P&C industry by New York county, 2016			
Albany	5,397	Niagara	315
Allegany	86	Oneida	2,366
Bronx	1,415	Onondaga	6,528
Broome	525	Ontario	272
Cattaraugus	131	Orange	691
Cayuga	260	Orleans	618
Chautauqua	276	Oswego	363
Chemung	678	Otsego	131
Chenango	838	Putnam	266
Clinton	168	Queens	2,973
Columbia	155	Rensselaer	379
Cortland	208	Richmond	578
Delaware	106	Rockland	1,560
Dutchess	1,364	Saratoga	160
Erie	19,265	Schenectady	3,738
Essex	54	Schoharie	286
Franklin	104	Schuyler	115
Fulton	183	Seneca	24
Genesee	167	St. Lawrence	20
Greene	131	Steuben	166
Hamilton	11	Suffolk	10,870
Herkimer	137	Sullivan	513
Jefferson	368	Tioga	73
Kings	3,752	Tompkins	544
Lewis	104	Ulster	610
Livingston	122	Warren	1,152
Madison	172	Washington	212
Monroe	5,581	Wayne	324
Montgomery	255	Westchester	7,276
Nassau	32,404	Wyoming	68
New York	33,506	Yates	32
Total all counties		151,143	
Source: Goss & Associates from IMPLAN Multiplier System			

U.S. Census data for 2016 show that Nassau County ranked second only to New York County in terms of the number of employees and firms in the P&C sector. Erie County had the third highest number of employees and firms. Figure 3.1 maps this data.

Figure 3.1: Job Impacts from the P&C industry by county, 2016
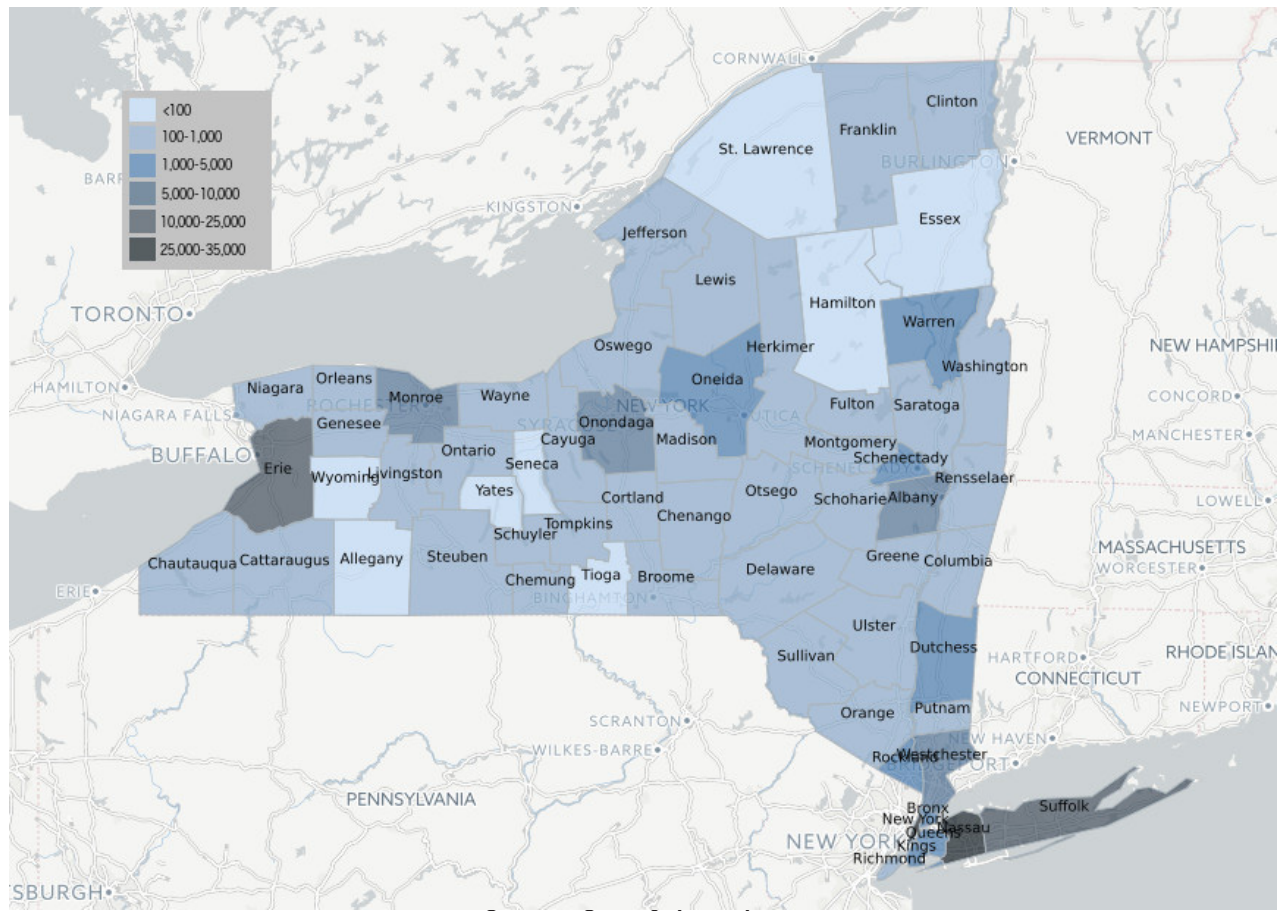
Source: Goss & Associates

Impacts by Senate and Assembly districts. Tables 3.9 and 3.10 list 2016 impacts by New York Senate district. In ascending order, the seven Senate districts experiencing the highest total or output impacts were 6, 7, 8, 9, 26, 27, 28, 30, 31, 44, 60 and 63. Tables 3.11 and 3.12 list 2016 impacts by New York Assembly districts, with the highest total or output impacts experienced by Assembly districts 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75 and 76.[36]

Figure 3.2 shows New York's Senate districts and the job impacts from the P&C industry for 2016. Figure 3.3 illustrates the 2016 job impacts for the P&C industry by New York Assembly district.

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[36]Implan does not produce estimates for political subdivisions. County impacts are allocated to Senate and Assembly districts based on population. Thus, districts within a county that have almost the same population will have the same economic impacts. Senate and Assembly districts are defined using the 2012 boundaries.

Table 3.9: Impacts by New York Senate districts (output and wages & salaries), 2016 (in 2017 dollars)					
District	Output	Wages & Salaries	District	Output	Wages & Salaries
1	$458,749,690	$120,552,304	33	$101,243,613	$9,529,471
2	$458,751,145	$120,552,686	34	$126,248,994	$19,604,152
3	$458,749,690	$120,552,304	35	$529,334,504	$183,048,575
4	$458,749,690	$120,552,304	36	$188,471,718	$44,674,013
5	$1,201,678,330	$324,859,558	37	$529,334,504	$183,048,575
6	$1,885,367,323	$512,875,759	38	$344,864,164	$91,518,470
7	$1,885,367,323	$512,875,759	39	$131,997,043	$34,324,880
8	$1,505,603,477	$408,439,741	40	$415,467,766	$140,425,546
9	$1,885,373,305	$512,877,386	41	$261,486,802	$74,233,967
10	$84,336,881	$20,631,989	42	$169,998,209	$34,804,678
11	$84,337,145	$20,632,054	43	$77,730,835	$22,141,142
12	$84,337,145	$20,632,054	44	$1,320,714,550	$335,631,469
13	$84,337,409	$20,632,118	45	$421,473,203	$70,786,457
14	$84,336,617	$20,631,925	46	$743,491,233	$167,199,689
15	$84,337,409	$20,632,118	47	$701,023,002	$116,015,347
16	$84,336,881	$20,631,989	48	$140,590,312	$24,839,588
17	$98,717,766	$17,786,081	49	$854,291,808	$151,948,207
18	$98,717,766	$17,786,081	50	$875,663,159	$258,834,749
19	$98,716,834	$17,785,913	51	$255,862,569	$65,285,149
20	$98,717,455	$17,786,025	52	$308,140,698	$52,438,471
21	$98,717,455	$17,786,025	53	$739,374,654	$215,450,061
22	$98,717,766	$17,786,081	54	$192,876,382	$38,955,702
23	$83,148,900	$16,612,709	55	$389,517,762	$121,101,340
24	$65,831,615	$15,307,601	56	$424,635,165	$133,406,214
25	$98,717,455	$17,786,025	57	$77,736,416	$14,552,238
26	$1,603,681,160	$728,008,505	58	$311,803,053	$63,857,358
27	$2,508,746,422	$1,155,126,908	59	$982,087,935	$257,615,880
28	$2,508,746,422	$1,155,126,908	60	$1,524,444,658	$397,670,194
29	$1,006,487,928	$440,285,266	61	$968,074,517	$257,250,537
30	$2,508,746,422	$1,155,126,908	62	$176,150,692	$56,775,324
31	$2,508,746,422	$1,155,126,908	63	$1,524,444,658	$397,670,194
32	$101,244,250	$9,529,531	Total	$40,183,726,076	$12,887,953,160
Source: Goss & Associates from IMPLAN Multiplier System					

Table 3.10: Impacts by New York Senate districts (self-employment income & jobs), 2016 (in 2017 dollars)					
District	Self-employment income	Jobs	District	Self-employment income	Jobs
1	$18,345,873	2,290	33	$4,440,998	324
2	$18,345,931	2,290	34	$6,624,431	442
3	$18,345,873	2,290	35	$41,967,763	2,361
4	$18,345,873	2,290	36	$12,057,667	738
5	$55,342,065	5,063	37	$41,967,763	2,361
6	$89,388,254	7,615	38	$51,861,915	1,577
7	$89,388,254	7,615	39	$11,984,402	739
8	$70,476,861	6,198	40	$32,423,781	1,934
9	$89,388,538	7,615	41	$15,109,192	1,360
10	$1,877,556	425	42	$5,335,056	999
11	$1,877,561	425	43	$5,737,657	516
12	$1,877,561	425	44	$24,772,622	4,416
13	$1,877,567	425	45	$12,756,239	1,676
14	$1,877,550	425	46	$15,720,145	2,748
15	$1,877,567	425	47	$9,515,827	2,352
16	$1,877,556	425	48	$6,378,302	741
17	$10,073,541	475	49	$20,059,578	3,092
18	$10,073,541	475	50	$8,953,045	3,750
19	$10,073,446	475	51	$7,755,432	1,300
20	$10,073,510	475	52	$6,361,106	1,191
21	$10,073,510	475	53	$10,398,104	3,177
22	$10,073,541	475	54	$9,794,220	1,036
23	$7,535,777	436	55	$14,496,176	2,025
24	$4,712,995	392	56	$15,402,053	2,183
25	$10,073,510	475	57	$7,866,290	547
26	$58,421,554	4,362	58	$5,924,280	1,331
27	$87,497,428	6,700	59	$13,020,236	4,080
28	$87,497,428	6,700	60	$14,470,431	6,139
29	$35,671,016	2,721	61	$13,378,704	4,086
30	$87,497,428	6,700	62	$8,935,113	1,187
31	$87,497,428	6,700	63	$14,470,431	6,139
32	$4,441,026	324	Total	$1,481,736,082	151,143
Source: Goss & Associates from IMPLAN Multiplier System					

Table 3.11: Output, wages & salaries impact by New York Assembly district, 2016 (in 2017 dollars)								
District	Output	Wages & Salaries	District	Output	Wages & Salaries	District	Output	Wages & Salaries
1	$187,672,776	$49,317,495	51	$38,563,693	$6,948,060	101	$124,560,292	$24,763,702
2	$187,672,776	$49,317,495	52	$38,561,831	$6,947,725	102	$151,351,458	$48,776,678
3	$187,669,865	$49,316,730	53	$38,563,693	$6,948,060	103	$87,056,633	$27,784,207
4	$187,674,231	$49,317,877	54	$38,565,246	$6,948,340	104	$71,618,406	$20,480,786
5	$187,665,498	$49,315,582	55	$38,564,625	$6,948,228	105	$121,031,589	$34,527,876
6	$187,674,231	$49,317,877	56	$38,564,004	$6,948,116	106	$100,807,353	$26,912,450
7	$187,671,320	$49,317,112	57	$38,563,383	$6,948,004	107	$50,866,383	$17,630,210
8	$187,664,042	$49,315,200	58	$38,567,418	$6,948,731	108	$407,831,724	$105,720,871
9	$421,142,970	$113,522,424	59	$38,564,004	$6,948,116	109	$712,748,307	$179,581,620
10	$187,672,776	$49,317,495	60	$38,567,108	$6,948,675	110	$786,139,166	$172,242,389
11	$187,671,320	$49,317,112	61	$25,715,691	$5,979,582	111	$617,080,162	$110,594,163
12	$187,666,953	$49,315,965	62	$25,716,519	$5,979,775	112	$215,999,956	$38,281,906
13	$771,284,729	$209,812,293	63	$25,716,726	$5,979,823	113	$40,271,764	$4,521,357
14	$771,290,712	$209,813,920	64	$28,646,784	$6,200,482	114	$350,033,656	$58,563,356
15	$771,272,765	$209,809,038	65	$1,045,226,207	$481,263,832	115	$40,709,980	$9,320,732
16	$771,296,694	$209,815,547	66	$1,045,202,541	$481,252,936	116	$41,200,680	$7,880,502
17	$771,290,712	$209,813,920	67	$1,045,904,629	$481,576,205	117	$184,512,444	$30,371,497
18	$771,296,694	$209,815,547	68	$1,043,435,491	$480,439,315	118	$109,884,083	$19,106,896
19	$771,284,729	$209,812,293	69	$1,044,831,776	$481,082,221	119	$382,610,571	$64,073,785
20	$771,290,712	$209,813,920	70	$1,044,855,442	$481,093,117	120	$132,013,379	$31,181,964
21	$771,278,747	$209,810,665	71	$1,045,202,541	$481,252,936	121	$94,066,925	$20,573,199
22	$771,284,729	$209,812,293	72	$1,045,675,859	$481,470,870	122	$263,224,664	$40,699,378
23	$32,801,508	$8,024,489	73	$1,046,117,621	$481,674,275	123	$59,332,920	$13,616,197
24	$32,801,508	$8,024,489	74	$1,046,078,178	$481,656,114	124	$166,676,722	$29,967,604
25	$32,793,051	$8,022,420	75	$1,046,180,730	$481,703,333	125	$151,961,618	$34,688,073
26	$32,790,937	$8,021,903	76	$1,046,196,507	$481,710,597	126	$285,562,777	$68,766,786
27	$32,793,844	$8,022,614	77	$40,247,662	$3,788,278	127	$437,335,837	$131,296,648
28	$32,792,787	$8,022,355	78	$40,244,479	$3,787,978	128	$424,085,806	$127,318,733
29	$32,806,265	$8,025,653	79	$40,250,846	$3,788,577	129	$424,076,022	$127,315,796
30	$32,793,580	$8,022,549	80	$40,243,205	$3,787,858	130	$87,477,292	$11,066,629
31	$32,806,794	$8,025,782	81	$40,240,977	$3,787,648	131	$40,282,935	$7,954,323
32	$32,806,001	$8,025,588	82	$40,243,205	$3,787,858	132	$70,454,547	$17,271,873
33	$32,808,644	$8,026,234	83	$40,242,250	$3,787,768	133	$90,525,651	$25,298,279
34	$32,791,465	$8,022,032	84	$40,243,842	$3,787,918	134	$191,363,073	$60,119,899
35	$32,798,865	$8,023,842	85	$40,241,932	$3,787,738	135	$191,750,944	$60,241,755
36	$32,794,108	$8,022,679	86	$40,248,617	$3,788,368	136	$194,217,634	$61,016,706
37	$32,792,787	$8,022,355	87	$40,242,887	$3,787,828	137	$194,214,728	$61,015,794
38	$32,799,130	$8,023,907	88	$225,805,981	$78,085,715	138	$194,217,634	$61,016,706
39	$32,795,958	$8,023,131	89	$227,288,296	$78,598,312	139	$141,852,885	$43,290,477
40	$32,792,258	$8,022,226	90	$227,291,739	$78,599,503	140	$573,224,554	$149,860,455
41	$38,563,073	$6,947,948	91	$225,799,094	$78,083,333	141	$680,873,317	$177,614,203
42	$38,569,281	$6,949,067	92	$227,586,136	$78,701,308	142	$680,868,106	$177,612,844
43	$38,562,762	$6,947,892	93	$225,833,527	$78,095,240	143	$677,178,950	$176,650,482
44	$38,564,004	$6,948,116	94	$124,843,036	$40,711,270	144	$284,087,867	$75,938,161
45	$38,562,452	$6,947,836	95	$182,671,845	$62,424,814	145	$131,450,617	$35,963,071
46	$38,561,521	$6,947,669	96	$144,156,335	$35,715,422	146	$639,431,305	$166,900,623
47	$38,560,279	$6,947,445	97	$144,151,987	$35,714,345	147	$507,257,981	$131,353,945
48	$38,562,141	$6,947,781	98	$63,466,397	$16,035,796	148	$31,678,572	$7,341,764
49	$38,565,556	$6,948,396	99	$50,397,451	$12,851,966	149	$680,873,317	$177,614,203
50	$38,563,693	$6,948,060	100	$103,515,339	$16,537,935	150	$39,563,344	$6,589,103
						Total	$40,183,726,076	$12,887,953,160
Source: Goss & Associates from IMPLAN Multiplier System								

District	Self-Employment Income	Jobs	District	Self-Employment Income	Jobs	District	Self-Employment Income	Jobs
1	$7,505,228	937	51	$3,935,188	185	101	$3,185,184	546
2	$7,505,228	937	52	$3,934,998	185	102	$3,447,319	754
3	$7,505,111	937	53	$3,935,188	185	103	$1,929,682	478
4	$7,505,286	937	54	$3,935,346	185	104	$3,250,875	394
5	$7,504,937	937	55	$3,935,283	185	105	$6,884,130	616
6	$7,505,286	937	56	$3,935,220	185	106	$6,882,628	536
7	$7,505,170	937	57	$3,935,156	185	107	$2,673,415	323
8	$7,504,879	937	58	$3,935,568	185	108	$7,866,515	1,411
9	$19,131,552	1,808	59	$3,935,220	185	109	$13,251,645	2,352
10	$7,505,228	937	60	$3,935,536	185	110	$15,074,844	2,646
11	$7,505,170	937	61	$1,841,029	153	111	$14,015,508	2,177
12	$7,504,995	937	62	$1,841,088	153	112	$4,949,056	786
13	$36,567,832	3,115	63	$1,841,103	153	113	$3,816,199	199
14	$36,568,116	3,115	64	$2,318,808	160	114	$7,412,624	1,278
15	$36,567,265	3,115	65	$36,454,304	2,791	115	$2,312,933	273
16	$36,568,399	3,115	66	$36,453,479	2,791	116	$2,067,811	214
17	$36,568,116	3,115	67	$36,477,966	2,793	117	$5,387,127	686
18	$36,568,399	3,115	68	$36,391,850	2,787	118	$4,409,189	506
19	$36,567,832	3,115	69	$36,440,548	2,790	119	$4,010,134	1,283
20	$36,568,116	3,115	70	$36,441,373	2,790	120	$3,288,579	634
21	$36,567,548	3,115	71	$36,453,479	2,791	121	$4,356,634	435
22	$36,567,832	3,115	72	$36,469,987	2,793	122	$4,414,430	876
23	$730,246	165	73	$36,485,394	2,794	123	$2,076,113	345
24	$730,246	165	74	$36,484,018	2,794	124	$4,417,177	690
25	$730,058	165	75	$36,487,595	2,794	125	$3,467,314	678
26	$730,010	165	76	$36,488,145	2,794	126	$4,170,106	1,178
27	$730,075	165	77	$1,765,443	129	127	$4,160,201	1,868
28	$730,052	165	78	$1,765,303	129	128	$4,034,159	1,811
29	$730,352	165	79	$1,765,582	129	129	$4,034,066	1,811
30	$730,069	165	80	$1,765,247	129	130	$4,282,001	454
31	$730,363	165	81	$1,765,149	129	131	$3,548,494	290
32	$730,346	165	82	$1,765,247	129	132	$1,533,467	348
33	$730,405	165	83	$1,765,205	129	133	$3,891,886	511
34	$730,022	165	84	$1,765,275	129	134	$6,940,980	984
35	$730,187	165	85	$1,765,191	129	135	$6,955,048	986
36	$730,081	165	86	$1,765,485	129	136	$7,044,518	999
37	$730,052	165	87	$1,765,233	129	137	$7,044,413	998
38	$730,193	165	88	$17,902,804	1,007	138	$7,044,518	999
39	$730,122	165	89	$18,020,328	1,014	139	$9,065,985	970
40	$730,040	165	90	$18,020,601	1,014	140	$5,473,834	2,320
41	$3,935,125	185	91	$17,902,258	1,007	141	$6,463,029	2,742
42	$3,935,758	185	92	$18,043,942	1,015	142	$6,462,980	2,742
43	$3,935,093	185	93	$17,904,988	1,007	143	$6,427,961	2,727
44	$3,935,220	185	94	$9,798,046	638	144	$3,544,939	1,226
45	$3,935,061	185	95	$14,452,687	839	145	$1,414,302	588
46	$3,934,966	185	96	$23,924,106	663	146	$6,079,317	2,579
47	$3,934,840	185	97	$23,923,384	663	147	$6,025,387	2,060
48	$3,935,030	185	98	$6,847,666	346	148	$3,931,740	224
49	$3,935,378	185	99	$4,039,542	296	149	$6,463,029	2,742
50	$3,935,188	185	100	$2,700,763	603	150	$3,368,210	276
						Total	$1,481,736,082	151,143

Table 3.12: Self-employment income and jobs by New York Assembly district, 2016 (in 2017 dollars)
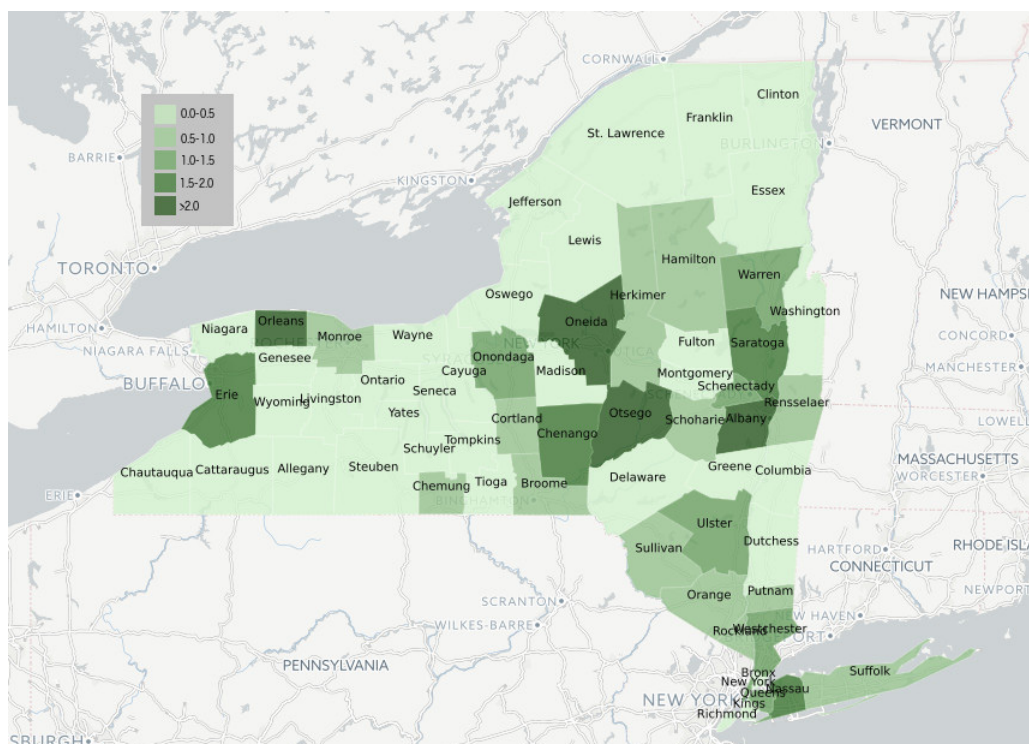
Source: Goss & Associates from IMPLAN Multiplier System

Figure 3.2: P&C industry job impacts by New York Senate district 2016
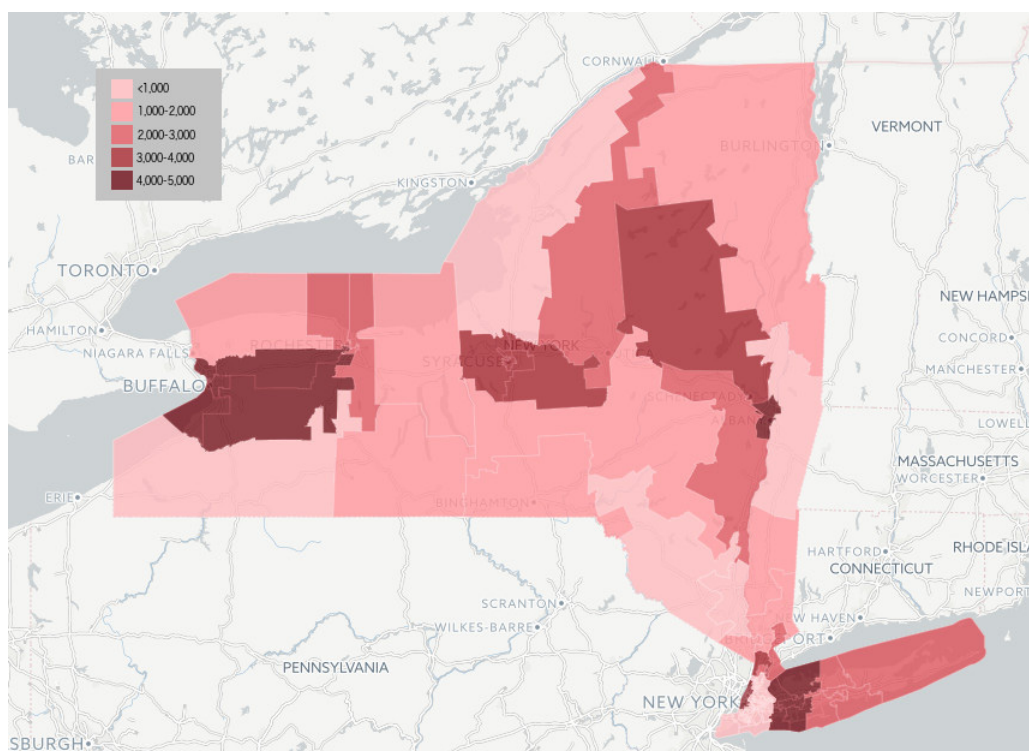
Source: Goss & Associates

**Figure 3.3: P&C industry job impacts by New York Assembly district, 2016**

Source: Goss & Associates

Table 3.13: New York Economic Development Region Impacts, 2016 (in 2017 dollars)				
Region	Output	Wages & Salaries	Self-Employment Income	Jobs
Capital Region	$3,241,909,487	$718,689,232	$67,505,715	11,451
Central New York	$1,702,251,446	$491,968,363	$24,768,098	7,530
Finger Lakes	$1,456,199,668	$421,701,673	$58,757,996	7,748
Long Island	$10,198,892,287	$2,754,229,778	$467,440,573	43,273
Mid-Hudson Region	$2,580,390,142	$809,712,765	$211,359,469	12,280
Mohawk Valley	$845,550,707	$143,238,959	$14,880,077	3,067
New York City	$14,455,744,361	$6,125,574,302	$556,722,807	42,223
North Country	$167,503,240	$31,459,430	$11,302,746	957
Southern Tier	$632,176,859	$113,782,066	$15,508,367	2,541
Western New York	$4,903,107,880	$1,277,596,593	$53,490,233	20,072
Total	40,183,726,076	12,887,953,160	1,481,736,082	151,143
Source: Goss & Associates from IMPLAN Multiplier System				

Figure 3.4: New York's economic development regions and the jobs impact from the P&C industry, 2016
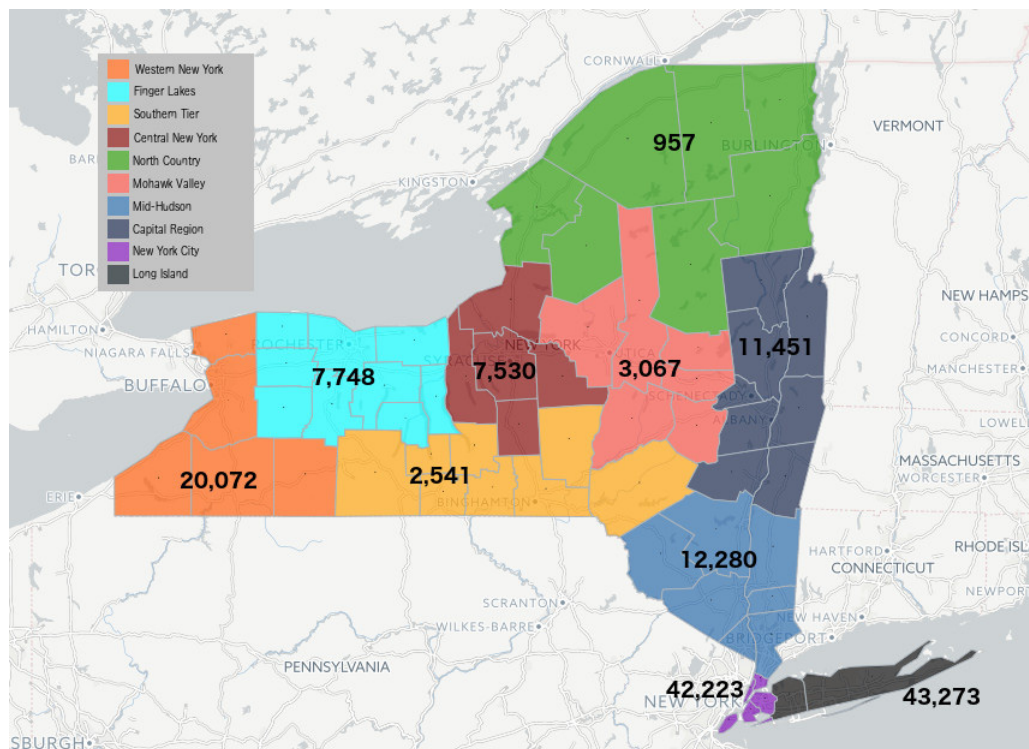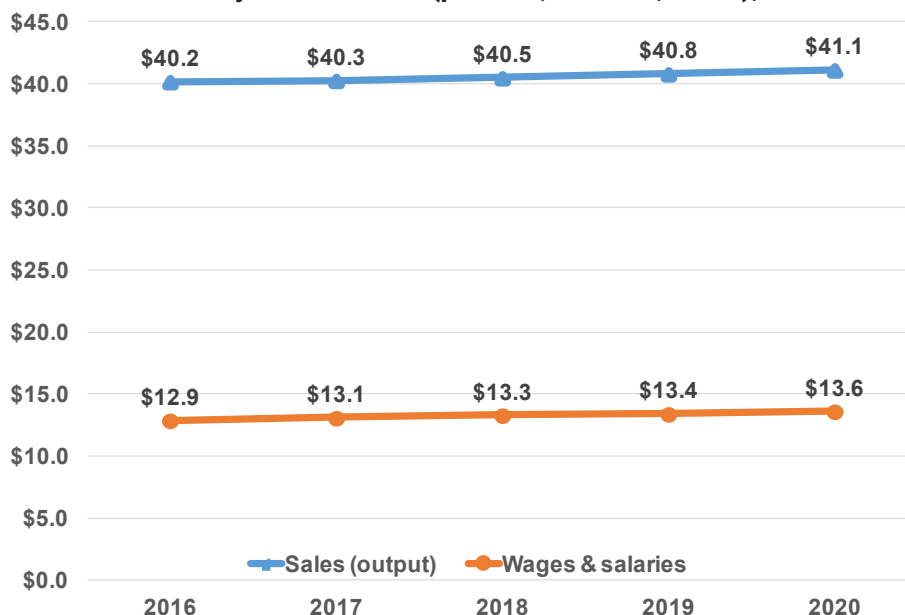

Source: Goss & Associates

Yearly Impacts – 2016 Through 2020

Figures 3.5, 3.6, and 3.7 depict yearly impacts from 2016 through 2020 of New York P&C firms on sales, wages and salaries, self-employment income, state and local taxes, and jobs on the state of New York. As shown, impacts in each case increase slightly each year.

Figure 3.5: Sales and wages and salaries impacts (in billions of dollars) of the P&C industry on New York (present, or 2017, value), 2016-2020

Source: Goss & Associates based on Implan models
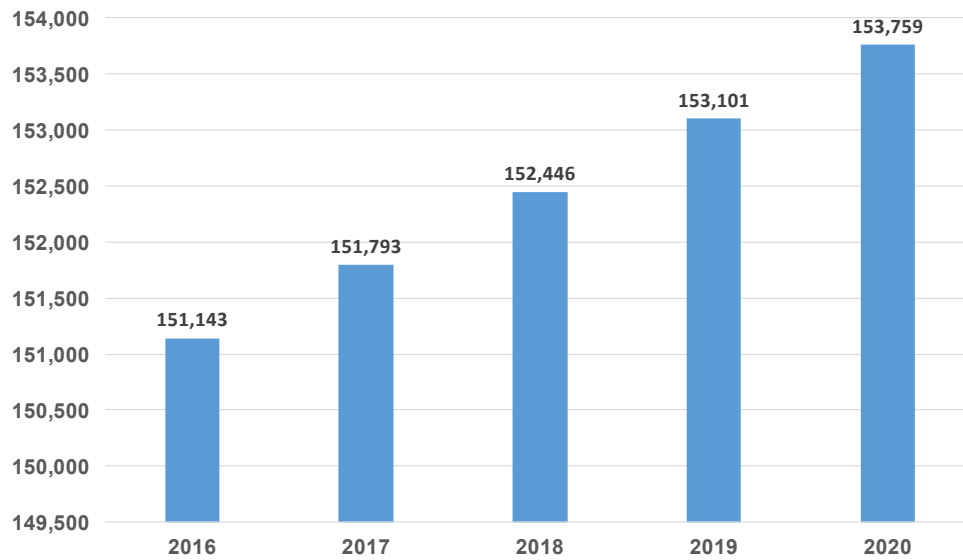Source: Goss & Associates based on IMPLAN model

Figure 3.6: Self-employment income and state and local tax impacts (in millions of dollars) of the P&C industry on New York (present, or 2017, value), 2016-2020
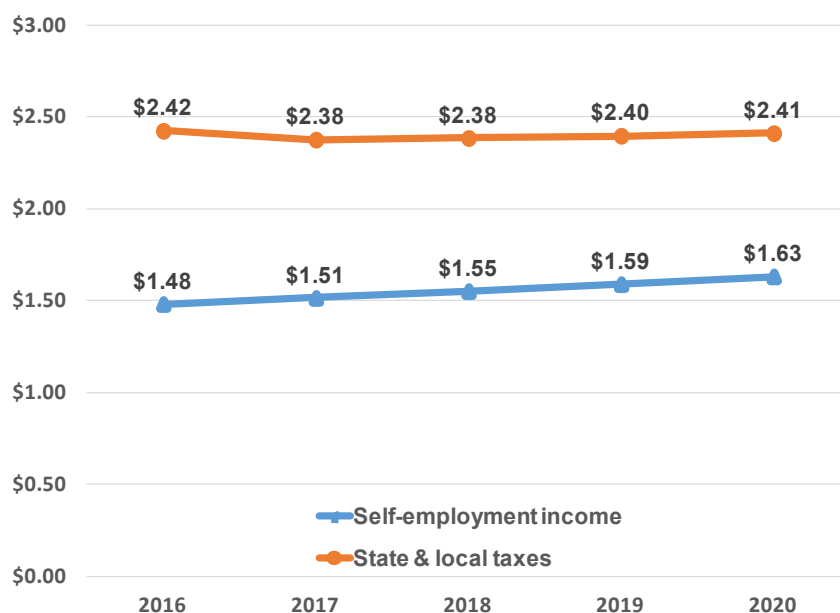
Source: Goss & Associates based on Implan models
Source: Goss & Associates based on IMPLAN model

Figure 3.7: Impacts of the P&C industry on New York jobs, 2016-2020 (in number of jobs)

Source: Goss & Associates based on IMPLAN models

Summary

This chapter has detailed the impact of New York's P&C industry, both captive and independent. As presented, the impacts are quite significant. Future impacts, as estimated, will differ depending on competition from other states in terms of financial incentives and legislation that impacts the profitability of P&C insurance firms.
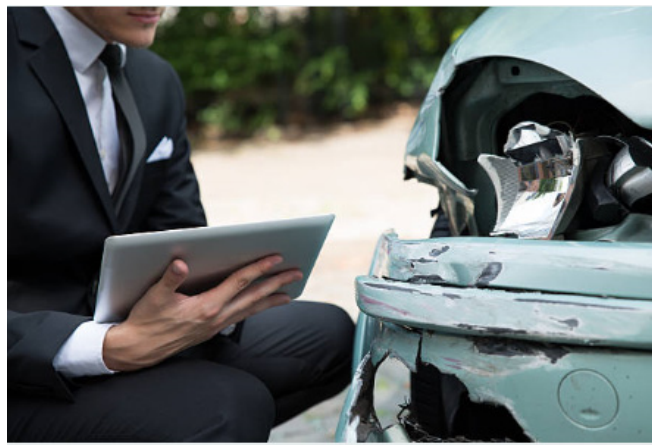
Appendices

Appendix A: The Economic Significance of New York's Insurance Industry

Location quotients (LQ) are one of the most widely used measures to judge the significance of an industry to a state, county or metropolitan area. A location quotient (LQ) is a rather simple economic development tool that helps identify what are known as "basic" and "non-basic" industries in the economy. Basic industries are those that draw money into the economy from outside its borders, while non-basic industries serve the needs of the populace and businesses within the state, county or metropolitan area border.

Mathematically, a location quotient is simply an industry's share of area employment over the industry's share of national employment. If the location quotient is 1.0, then the industry's share of local employment is the same as the industry's share nationally. A location quotient greater than 1.0 means the industry employs a greater share of the local workforce in the area than it does nationally. A location quotient less than 1.0 implies that the industry's share of local employment is smaller than its share of national employment. Equation A1 shows the formula used to calculate New York's insurance industry LQ:

$$\text{LQ (NY Ins.)} = (\text{NY Ins. Emp.} / \text{Total NY Emp.}) \div (\text{US Ins. Emp.} / \text{Total US Emp.}) \quad (A.1)$$

The numerator of Equation A.1 is the percentage of New York's employment in the insurance industry and the denominator is the percentage of nation's employment in the insurance industry. A location quotient greater than 1.0 indicates that the industry is exporting goods or services out of the area and, in the process, bringing new dollars into the area. Industries that bring dollars into the area help the local economy grow and are considered basic. Basic industries are the ndustries that are said to really turn the wheels of an economy by generating exports and bringing "new" dollars to the state.

> A location quotient greater than one indicates that the industry is exporting goods or services out of the area and, in the process, bringing new dollars into the area.

> The more the location quotient exceeds 1.0, the greater the importance of the industry to the economic viability of the state or area.

Table A.1[37] compares New York insurance industry employment and location quotients with those of neighboring states and the U.S. Data indicate that New York has a higher share of its overall employment concentrated in the insurance industry and that, by extension, New York's insurance industry is bringing new dollars into the state (e.g. exporting insurance services to the rest of the nation and globe).

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[37] 2015 County Business Pattern data is the latest available. These estimates may differ from those provided by U.S. Bureau of Labor Statistics (BLS) and the U.S. Bureau of Economic Analysis (BEA) which use different data sources and provide more recent data.

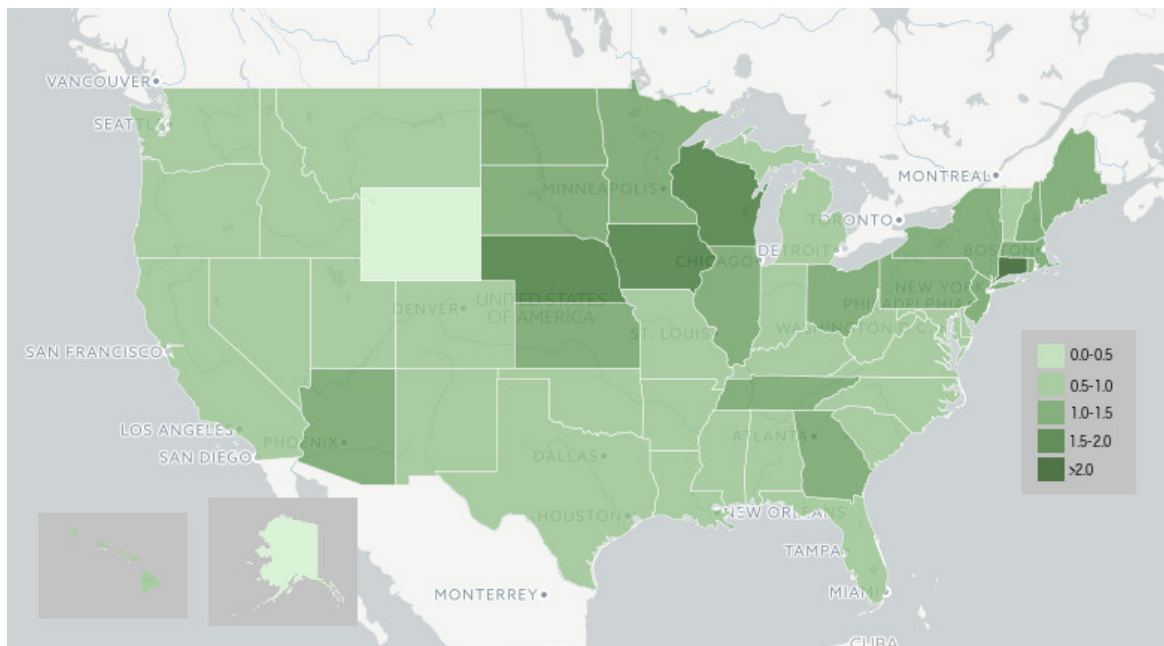| Table A.1: Employment and LQs for the insurance carrier Industry (2015)			
State	Insurance & related employment	Insurance & related employment as % of private employment	Location quotient
Connecticut	61,476	4.09%	2.07
Massachusetts	69,337	2.19%	1.11
New Jersey	77,306	2.17%	1.10
New York	163,763	2.05%	1.04
Pennsylvania	124,839	2.35%	1.19
Vermont	3,748	1.41%	0.71
Total U.S.	2,453,404	1.98%	1.00
Source: Goss & Associates based on U.S. Bureau of Census data			

However, it must be noted that insurance carriers tend to cluster in states, thus any LQ above 1.0 is very strong. In fact, only 20 states have LQs above 1.0. The concentration of insurance industry jobs points to the potential gains for states that can encourage the relocation of new firms to their borders.

Next, location quotients are computed for each U.S. state. Figure A.1 and Table A.2 profile LQs for all 50 states and the District of Columbia. Figure A.1 shows that the insurance industry is rather concentrated, implying that it benefits from clustering. That is, insurance firms gain from locating close to other insurance firms. Clustering of insurance firms tends to encourage traditional suppliers to the insurance industry to locate close by and also helps ensure that there is a large pool of skilled insurance industry workers in the region.

LQs ranged from DC's 0.32 to Connecticut's 2.07. These findings suggest that the New York insurance industry is an important driver of state income by exporting insurance services to other states, those with LQs less than 1.0. As indicated, most states are net importers of insurance services.

Figure A.1: Insurance industry location quotients by U.S. state (2015)

Source: U.S. Census, County Business Patterns

Table A.2: Employment and LQs for the insurance carrier Industry (2015)					
State	LQ	State	LQ	State	LQ
Connecticut	2.07	South Dakota	1.04	Washington	0.79
Iowa	1.71	New York	1.04	Montana	0.78
Wisconsin	1.55	North Dakota	1.02	Louisiana	0.77
Nebraska	1.54	Kentucky	0.99	Hawaii	0.77
Illinois	1.48	Florida	0.98	North Carolina	0.75
Minnesota	1.25	Missouri	0.95	Vermont	0.71
Ohio	1.21	Texas	0.93	Oklahoma	0.71
Arizona	1.21	Michigan	0.92	Utah	0.70
Rhode Island	1.20	Colorado	0.91	Idaho	0.70
New Hampshire	1.19	South Carolina	0.89	New Mexico	0.68
Pennsylvania	1.19	Virginia	0.88	Arkansas	0.64
Maine	1.11	Indiana	0.88	Mississippi	0.58
Massachusetts	1.11	Delaware	0.88	Nevada	0.54
New Jersey	1.10	Oregon	0.83	West Virginia	0.52
Kansas	1.09	Maryland	0.82	Wyoming	0.49
Tennessee	1.06	California	0.79	Alaska	0.33
Georgia	1.06	Alabama	0.79	District of Columbia	0.32
				United States	**1.00**
Source: Goss & Associates based on U.S. Bureau of Census data					

Figure A.1 showed the clustering of insurance carriers in the U.S. On the following page this study examines the clustering of insurance jobs in New York.[38]

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[38]Measured industry employment will vary depending on the source of the data. For example, U.S. Census employment is measured in March of each year, whereas U.S. Bureau of Labor Statistics provides average employment for the entire year.

Figure A.2 and Table A.3 show LQs for each of New York's 62 counties in 2015. As presented, Orleans, Otsego, and Oneida had the three highest insurance industry LQs in the state. Seneca County had the lowest LQ in the state for 2015.

Per Figure A.2, 14 New York counties had LQs greater than 1.00. As in the U.S., there is a considerable degree of concentration of insurance firms and jobs in New York.

As indicated, Orleans County had a LQ of 4.42 in 2015. This means that Orleans County's concentration of insurance jobs was 442% of the U.S. concentration of insurance jobs in 2015.

Data in Table A.1 indicated that of New York's neighbors, only Vermont sends net dollars to other states for insurance services. Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania have LQs greater than 1.0. The New York location quotient is 1.04, indicating that New York has 4 percent more insurance related employment as a share of total employment than the United States. Specifically, 2.05 percent of New York employment is in the insurance carrier industry versus 1.98 percent of U.S. employment.

Figure A.2: Insurance industry location quotients by county, New York (2015)
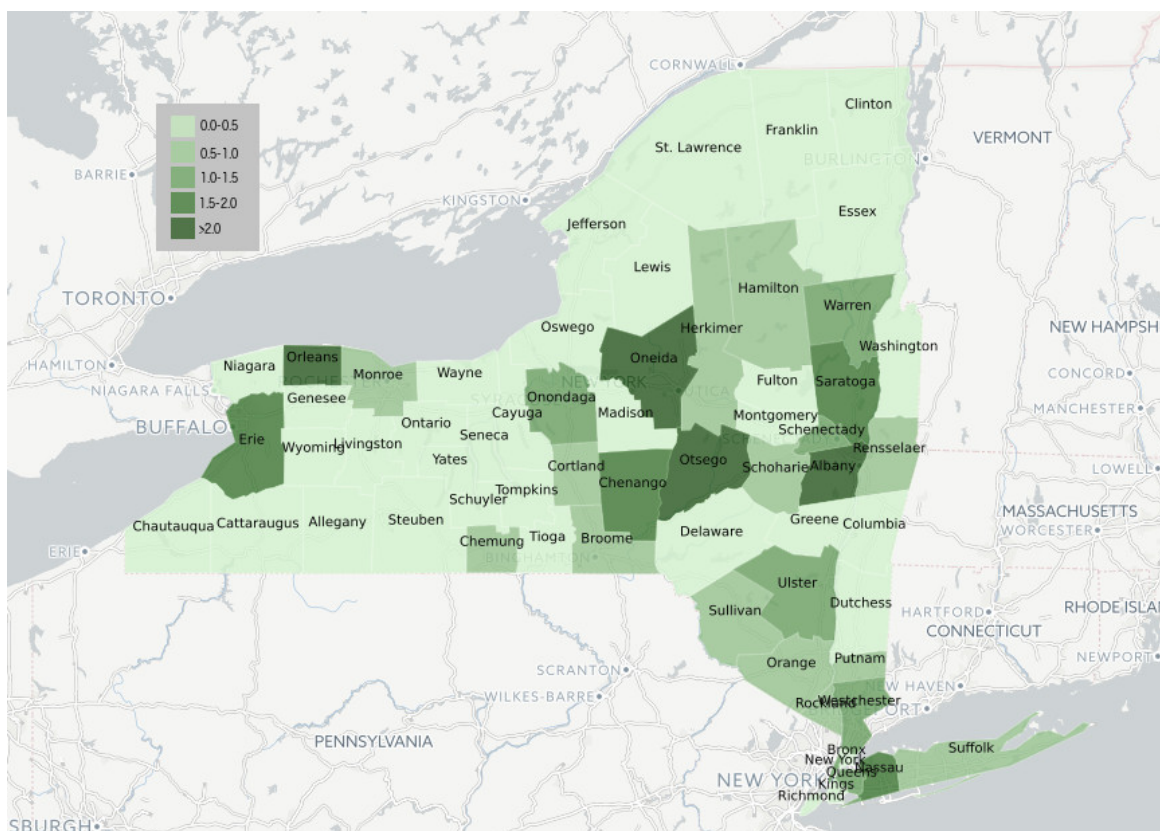
Source: U.S. Census, County Business Patterns

Table A.3: Location quotients by New York county, 2015					
County	LQ	County	LQ	County	LQ
Orleans	4.42	Broome	0.69	Montgomery	0.37
Otsego	2.32	Chemung	0.61	Kings	0.36
Oneida	2.29	Hamilton	0.60	Washington	0.35
Albany	2.01	Cortland	0.59	Yates	0.34
Chenango	1.86	Putnam	0.56	Livingston	0.34
Nassau	1.59	Herkimer	0.56	Cayuga	0.34
Erie	1.59	Orange	0.55	Allegany	0.33
Saratoga	1.56	Rockland	0.55	Tompkins	0.31
Onondaga	1.46	Greene	0.49	Schuyler	0.31
New York	1.17	Dutchess	0.49	Richmond	0.29
Schenectady	1.16	Fulton	0.48	Clinton	0.29
Warren	1.06	Tioga	0.46	Steuben	0.28
Queens	1.06	Wayne	0.45	Essex	0.28
Westchester	1.02	Genesee	0.42	Chautauqua	0.27
Ulster	1.00	Delaware	0.42	Cattaraugus	0.27
Rensselaer	0.90	Lewis	0.41	Wyoming	0.24
Monroe	0.86	Columbia	0.40	Bronx	0.24
Sullivan	0.82	Madison	0.40	St. Lawrence	0.23
Schoharie	0.81	Oswego	0.40	Ontario	0.22
Suffolk	0.72	Jefferson	0.39	Niagara	0.22
		Franklin	0.38	Seneca	0.13
Source: Goss & Associates based on U.S. Bureau of Census data					

Appendix B:
Measuring the Impact of P&C Insurance

An Overview

P&C insurance is an engine of economic growth for the state of New York. Furthermore, P&C vendors contribute to the economy through their own employment and payroll, and through purchases from vendors. Payments to these vendors are an important source of growth for the state economy. Thus, P&C firms produce benefits for the New York taxpayer, both directly and indirectly.

> Direct benefits for the New York taxpayer include the receipt of sales taxes on purchases by P&C firms.

As a result of the widespread distribution of insurance operations, the industry's existence in New York affects the state's economy in many ways.

As discussed earlier, the presence of P&C companies increases the attractiveness of the community and, in the long run, encourages the startup and/or relocation of retail businesses and manufacturing firms to the state. Access to P&C jobs also increases quality-of-life, helping the state to retain and attract individuals, thereby helping to create "brain gain."

In addition to these growth dynamics, there also is economic activity related to the direct expenditures by insurance vendors, such as payroll, local jobs and income. Furthermore, P&C firms indirectly affect the overall level of state economic activity. For example, the office supplies industry provides jobs and income for workers in the state as a result of insurance spending on computers and office supplies.

Large portions of P&C spending are made in the local economy. That portion spent locally adds to community income. Economic impacts that take place outside the local economy, for example, spending in New Jersey, are called leakages and reduce overall impacts. They are excluded when estimating economic impacts of the local area and the state.

> Insurance contributes to New York's economy by encouraging businesses, residents, and visitors to purchase in the state.

Additionally, P&C firms increase retail sales in the local area and the state as employees and visitors who reside outside New York spend a portion of their wages in the state. In other words, P&C companies contribute to the region's export of retail goods. These sales have a positive impact on the local area by adding jobs and income in the retail and related industries. Table B.1 lists the three components of the total economic impact: the Direct Economic Impact, the Indirect Economic Impact, and the Induced Economic Impact.

> Access to P&C jobs also increases quality-of-life, helping the city to retain and attract well-educated individuals, thereby helping to create "brain gain."

Table B.1: The three components of the total economic impacts	
Direct Economic Impacts	Spending by P&C firms flowing into the area has direct economic effects on the local economy via expenditures for goods and services and for employee salaries. The most obvious direct expenditures are payment of wages to workers employed by the P&C sector. Direct economic impacts are color coded green in Figure B.1.
Indirect Economic Impacts	Second-round spending takes place as retailers and wholesalers that furnish P&C firms with supplies purchase from other companies in the area, resulting in indirect economic impacts on the area and state economies by the P&C insurance sector. Furthermore, P&C firms encourage the expansion of other businesses in the state. P&C companies generate indirect effects by increasing: (a) the number of firms drawn to the community, (b) the volume of deposits in local financial institutions and, (c) economic development. Examples of indirect economic impacts are color coded blue on Figure B.1.
Induced Economic Impacts	Induced impacts in the region occur as the initial spending feeds back to industries in the region when workers in the area purchase additional output from local firms in a third round of spending. That is, P&C companies increase overall area income and population, which produces another round of increased spending adding to sales, earnings and jobs. Examples of induced economic impacts are color coded red in Figure B.1.
Source: Goss & Associates	

Figure B.1: Schematic of Impacts
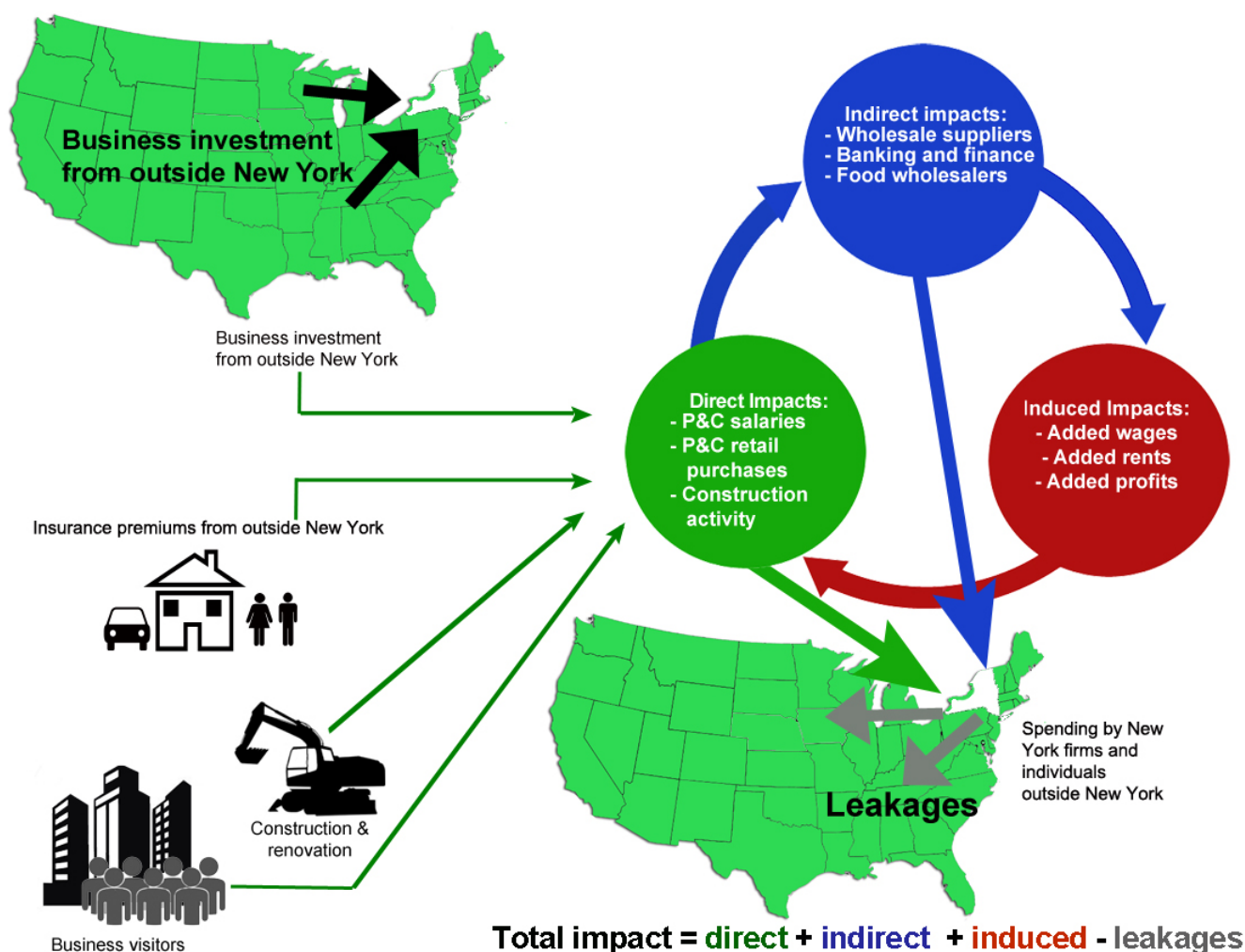
Source: Goss & Associates 2017

Appendix C:
Choosing a Technique to Measure Impacts

Historically, the high cost to develop I-O (Input-output) models prevented their widespread use in regional impact analysis. However, with the advent of "ready-made" multipliers produced by third parties, such as the U.S. Forestry Service, I-O multipliers became a much more viable option for performing impact analysis. These "ready-made" models are made region specific at a fraction of the costs of their predecessors.

All purely non-survey techniques or "ready-made" multipliers take a national I-O table as a first approximation of regional inter-industry relationships. The national table is then made region-specific by removing those input requirements that are not produced in the region. This study will use the most widely recognized "ready-made" multiplier system, IMPLAN Multipliers.

IMPLAN Multipliers

The Forestry Service of the U.S. Department of Agriculture developed the IMPLAN Multipliers in the 1980s (U.S. Forest Service, 1985). For very populous areas, IMPLAN divides the economy into 300-400 industrial sectors. Industries that do not exist in the region are automatically eliminated during user construction of the model (e.g. cotton farming in New York).

IMPLAN uses an industry-based methodology to derive its input-output coefficients and multipliers. Primary sources for data are *U.S. Census data* and *U.S. Bureau of Economic Analysis* data.

IMPLAN and RIMS (Regional Input-Output Modeling System) are two of the most widely used multiplier models. IMPLAN has been compared to other multiplier systems and found to produce reliable estimates.[39]   Likewise, in a study estimating the impacts of opening an automobile assembly plant, researchers concluded that IMPLAN's outcomes are, on balance, somewhat more accurate than RIMS.[40]

IMPLAN Multipliers possess the following advantages over other I-O multiplier systems:

1. Price changes are accounted for in the creation of the multipliers.

2. Employment increases or decreases are assumed to produce immediate in or out-migration.

> IMPLAN and RIMS (Regional Input-Output Modeling System) are two of the most widely used multiplier models.

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[39]Richman, D.S. and R.K. Schwer. "A Systematic Comparison of the REMI and IMPLAN Models: The Case of Southern Nevada." Review of Regional Studies, Vol. 23(2), 1993, pp. 143-161

[40]Crihfield, J. B. and H. S. Campbell, Jr. 1991. Evaluating alternative regional planning models. Growth and Change 22(2):1-16.

Appendix D: Researchers' Biographies

Ernie Goss is the Jack MacAllister Chair in Regional Economics at Creighton University and is the initial director for Creighton's Institute for Economic Inquiry. He is also principal of the Goss Institute in Denver, Colorado. Goss received his Ph.D. in Economics from The University of Tennessee in 1983 and is a former faculty research fellow at NASA's Marshall Space Flight Center. He was a visiting scholar with the Congressional Budget Office for 2003-04, and has testified before the U.S. Congress, the Kansas Legislature, and the Nebraska Legislature. In the fall of 2005, the Nebraska Attorney General appointed Goss to head a task force examining gasoline pricing in the state.

He has published more than 100 research studies focusing primarily on economic forecasting and on the statistical analysis of business and economic data. His book <u>Changing Attitudes Toward Economic Reform During the Yeltsin Era</u> was published by Praeger Press in 2003, and his book <u>Governing Fortune: Casino Gambling in America</u> was published by the University of Michigan Press in March 2007.

He is editor of Economic Trends, an economics newsletter published monthly with more than 9,500 subscribers, produces a monthly business conditions index for the nine-state Mid-American region and conducts a survey of bank CEOs in ten U.S. states. Survey and index results are cited each month in approximately 100 newspapers, and citations have included the New York Times, Wall Street Journal, Investors Business Daily, The Christian Science Monitor, Chicago Sun Times and other national and regional newspapers and magazines. Each month 75-100 radio stations carry his Regional Economic Report.

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Scott Strain is a senior research economist at Goss & Associates and currently teaches graduate classes in economics at the University of Nebraska-Omaha. He has worked as an economist and statistician for more than 20 years providing forecasts and analysis across a wide-range of industries. Scott served as an industry economist, working in new product development regarding both quantitative and qualitative research.

Scott was Senior Director of Research for an economic development agency, providing economic impact and tax incentive analysis to both private businesses and government entities. He served on the business advisory committee that worked with Nebraska state senators and the director of the state's Economic Development Department to develop the Nebraska Advantage Act – a comprehensive package of business incentives that has helped to add more than $6 billion in new capital investment and over 13,000 new jobs in the state of Nebraska since the Act's inception in 2006.

Appendix E: Goss & Associates Research Consultancies, 2014-2017

2017

1. The Economic Impact of the Streetcar on the City of Omaha. Completed for *the City of Omaha*.
2. The Economic Impact of the Flatiron Development On the City of Omaha. Completed for *Standard Development*.
3. Pet-Friendly Rankings, Pet Ownership Rates, and Economic Outcomes. Completed for *PetSmart Charities*.
4. The Impact of a Walkable, Workable, and Livable Midtown Omaha. Completed for *Midtown 2050*.
5. The Net Benefits and Costs of Prestage Farms to the Mid Iowa Region. Completed for the *Mid Iowa Growth Partnership*.
6. Boys Town: A Century of Contributions to the Economy of the Omaha Metropolitan Region and to the Well-Being of its Children and Families. Completed for *Boys Town*.
7. The Socioeconomic Impact of the Keystone XL Pipeline. https://issuu.com/consumerenergyalliance/docs/nebraska_keystonexl_study. Completed for *TransCanada*.

2016

8. The Economic Impact of the Death Penalty on the State of Nebraska. http://retainajustnebraska.com/wp-content/uploads/2016/08/Economic-Impact-of-the-Death-Penalty-on-the-State-of-Nebraska-.pdf. Completed for *Retain a Just Nebraska*.
9. Nebraska Public Power's Competitiveness in the Regional Energy Market. http://www.gossandassociates.com/app/download/4053197/WindIsWaterFinal.pdf. Completed for the *Wind is Water Foundation*.
10. The Impact of the expansion of Highway 81 on Nebraska. http://www.4lanes4nebraska.com/wp-content/uploads/2016/03/4Lanes-HWY-81-FINAL-2.pdf. Completed for *4 Lanes 4 Nebraska*.

2015

11. The Impact of Ho-Chunk on the Winnebago Community, and on the states of Iowa, Nebraska and South Dakota. http://www.hochunkinc.com/impact-report.php. Completed for *Ho-Chunk, Inc.*
12. The Economic Impact of the College World Series on the City of Omaha and the state of Nebraska, 2014-15. Completed for *College World Series, Inc.*
13. The Impact of Merging UNL's College of Architecture and the Hixson-Lied College of Fine and Performing Arts. Completed for the *Peter Kiewit Foundation*.
14. The Impact of the Expansion of Highway 275 on Nebraska. http://www.4lanes4nebraska.com/wp-content/uploads/2015/04/4Lanes4Nebraska-April-6-2015.pdf. Completed for *4lanes4nebraska*.

2014

15. Bio-Energy Development in Webster County: An Economic Engine, 2012-2018. http://www.greaterfortdodge.com/gfd/site-selectors/business-climate/economic-impact-study/?item=9262. Completed for *EcoEngineers*.
16. The economic contribution of an expanded dental school on the state of Nebraska and city of Omaha. Completed for *Creighton University School of Dentistry*.
17. The Economic Impact of the CenturyLink Center on Omaha, Nebraska. http://www.omahameca.com/ Libraries/MECA_PDFs/Goss_Study_Press_Release_FINAL.sflb.ashx. Completed for *MECA*.