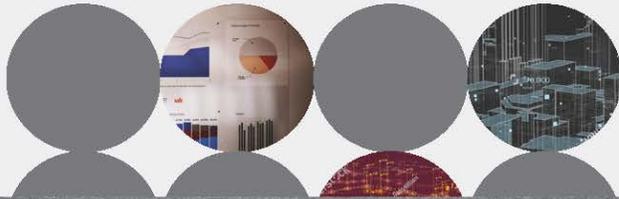


A Partnership Among Geisinger Commonwealth School of Medicine, Johnson College, Keystone College, Lackawanna College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Scranton, Penn State Wilkes-Barre, The Wright Center for Graduate Medical Education, University of Scranton & Wilkes University



THE INSTITUTE FOR PUBLIC POLICY & ECONOMIC DEVELOPMENT



July 2020

*Institute Insights:*

**GDP Impact of  
COVID-19 on  
Northeastern PA**



## Introduction

This research was underwritten by **the Greater Scranton Chamber of Commerce, Sordoni Family Foundation, and UGI Utilities** and with support from **the Luzerne County COVID-19 Emergency Response Fund of The Luzerne Foundation, the Scranton Area Community Foundation COVID 19 Fund and the Wells Fargo Foundation.**

## Research Methods

Two methods were used to evaluate the impact of COVID-19-related decline in GDP. The first involved an annualized decrease of overall GDP by 5.8 percent for calendar year 2020.

The second calculated change in GDP by industry sector. This method was developed by the Congressional Budget Office in 2006 to estimate the macro economic effects of the bird flu. Therefore, rather than an overall decline, it evaluates broad sectors and identifies an estimated impact. Therefore, the loss in the retail sector takes into account the decline due to the closure of retail stores, while considering an increase in grocery store sales. The Institute used the mild scenario setting which demonstrates industry change similar to the outbreaks in 1957-1958 and 1968 -1969 where about 75 million became ill and there were about 100,000 deaths as opposed to the severe outreach (Spanish flu 1918-1919) which had over 90 million ill with 2 million deaths.<sup>i</sup> Both scenarios use IMPLAN to evaluate economic impact.

## Introduction

This report was developed to estimate the impact of the COVID-19 pandemic on gross domestic product (GDP) and model the resulting macroeconomic effects on our region. The first portion of this report examines the regional wage and employment profile, and provides a snapshot of the jobs forecast for the leading industries and occupations in the region. Next, projections for the national GDP forecast are outlined, and a summary of historical GDP trends and contributions by sector in the region are provided as a baseline. Finally, two economic models are used to estimate the economic impact

on employment, income, and overall output in the region. The impact on local, state and federal taxes is also projected with both models.

## Regional Wage, Employment, and Unemployment Trends<sup>ii</sup>

As of 2019Q4, total employment for the Lackawanna and Luzerne Counties was 254,171 (based on a four-quarter moving average). Over the year ending 2019Q4, employment increased 0.0 percent in the region. By the end of 2020 Q1, the number increased to 254,227 which demonstrated a .1 percent increase. This is a slight increase over the prior period. The impact of COVID-19 is reflected in the second quarter of 2020. That data is not yet available.

The seasonally adjusted unemployment rate for the Lackawanna and Luzerne Counties was 5.7 percent as of February 2020. The regional unemployment rate was higher than the national rate of 3.5 percent. One year earlier, in February 2019, the unemployment rate in the Lackawanna and Luzerne Counties was 4.5 percent. By May 2020, it was 14.1 percent in the region as compared with 5.1 percent at the same time during May 2019.

Nationally, statistics show decreased unemployment in May. Specifically, it dropped 1.4 percentage points to 13.3 percent. This is likely due to increased employment in sectors that experienced growth during COVID (grocery stores, big box stores, and e-commerce). The U-6 rate which includes people who have stopped looking for work or could not find full time employment also decreased by 1.6 percentage points. First time jobless claims also decreased by 249,000.

The average worker in the Lackawanna and Luzerne Counties earned annual wages of \$43,989 as of 2019Q4. Average annual wages per worker increased 2.4 percent in the region over the preceding four quarters. For comparison purposes, annual average wages were \$57,413 in the nation as of 2019Q4.

The average worker in the Lackawanna and Luzerne Counties earned annual wages of \$44,082 as of 2020Q1. Average annual wages per worker

increased 2.0 percent in the region over the preceding four quarters. For comparison purposes, annual average wages were \$57,624 in the nation as of 2020Q1.

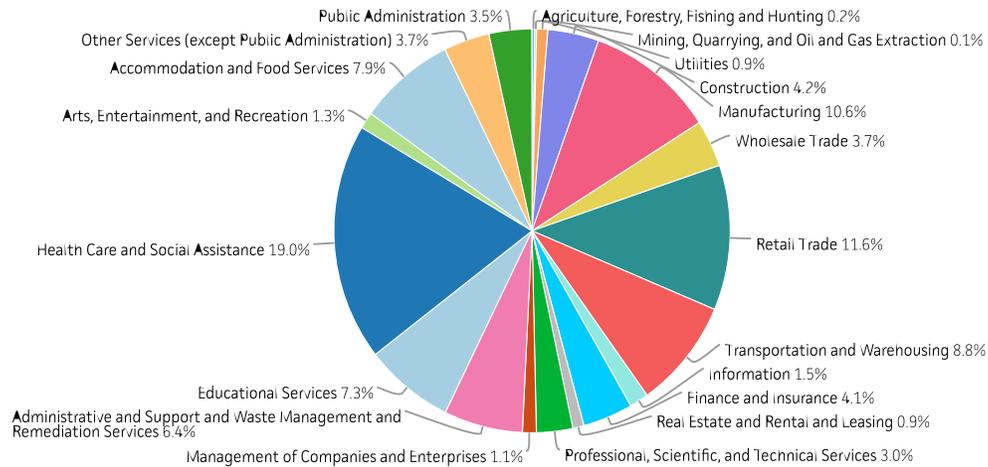
employing 48,393 workers. The next-largest sectors in the region are Retail Trade (29,522 workers) and Manufacturing (26,843).

The projected jobs forecast for the next 12 months demonstrates another loss, approximately 1,100 jobs. Manufacturing and retail see the biggest loss.

## Industry Profile<sup>iii</sup>

The largest sector in the Lackawanna and Luzerne Counties is Health Care and Social Assistance,

Total Workers for Lackawanna and Luzerne Counties by Industry



Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2019Q3 with preliminary estimates updated to 2020Q1.

## Occupation Snapshot<sup>iv</sup>

The largest major occupation group in Lackawanna and Luzerne Counties is Office and Administrative Support Occupations, employing 34,189 workers. The next-largest occupation groups in the region are Transportation and Material Moving Occupations (31,640 workers) and Sales and Related Occupations (24,094).

Occupation groups in the Lackawanna and Luzerne Counties with the highest average wages per worker are Management Occupations (\$104,900), Healthcare Practitioners and Technical Occupations (\$76,300), and Architecture and Engineering Occupations (\$74,800). The unemployment rate in the region varied among the major groups from 2.1 percent among Legal Occupations to 12.2 percent among Farming, Fishing, and Forestry Occupations.

Over the next 12 months, the fastest growing occupation group in the Lackawanna and Luzerne

Counties is expected to be Healthcare Support Occupations with a +1.3 percent year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Healthcare Support Occupations (+203 jobs) and Healthcare Practitioners and Technical Occupations (+64). Over the same period, the highest separation demand (occupation demand due to retirements and workers moving from one occupation to another) is expected in Transportation and Material Moving Occupations (3,963 jobs) and Office and Administrative Support Occupations (3,806).

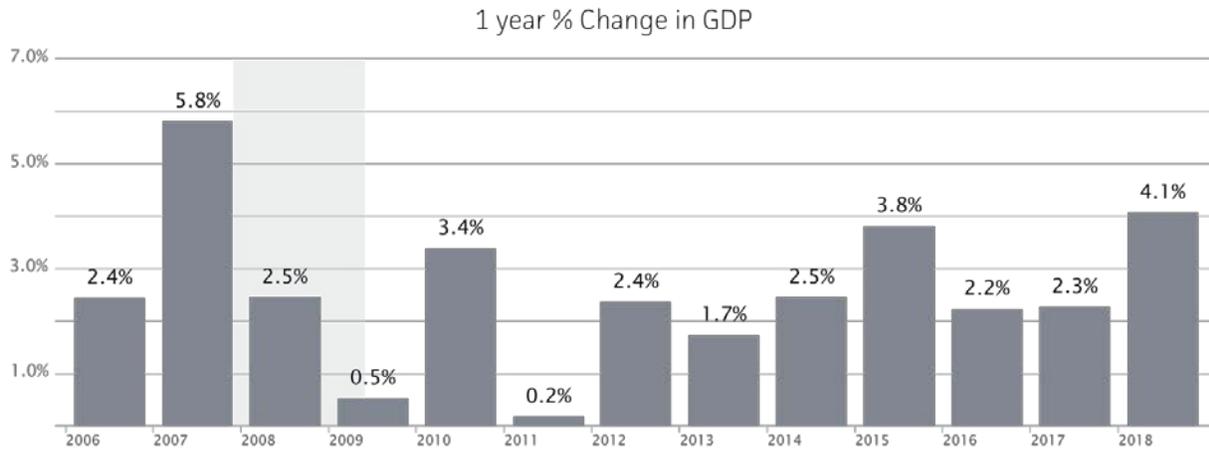
## Gross Domestic Product

Nationally, Gross Domestic Product was rising from 2-3 percent for the past five years. Bullish projections were in place for the next several years, however they were modified in December 2019 to be more conservative — primarily out of concerns of a trade war. U.S. GDP growth was projected to slow to 2.0 percent in 2020 from 2.2 percent in 2019. The

projections also included figures for 2021 (1.9%) and 2022 (1.8%) according to the most recent forecast released at the Federal Open Market Committee meeting on December 11, 2019. <sup>v</sup> <sup>vi</sup> However, in light of COVID-19, annualized GDP is projected to show a loss of nearly 6 percent in 2020 net of gains from the third and fourth quarter. The biggest loss manifested itself in the second quarter of 2020. <sup>vii</sup> It is anticipated that GDP will grow in 2021, similar to the level in 2019 at least, it is predicted to mirror the recovery seen after the Global Financial Crisis. In an environment of rising employment, continued easing

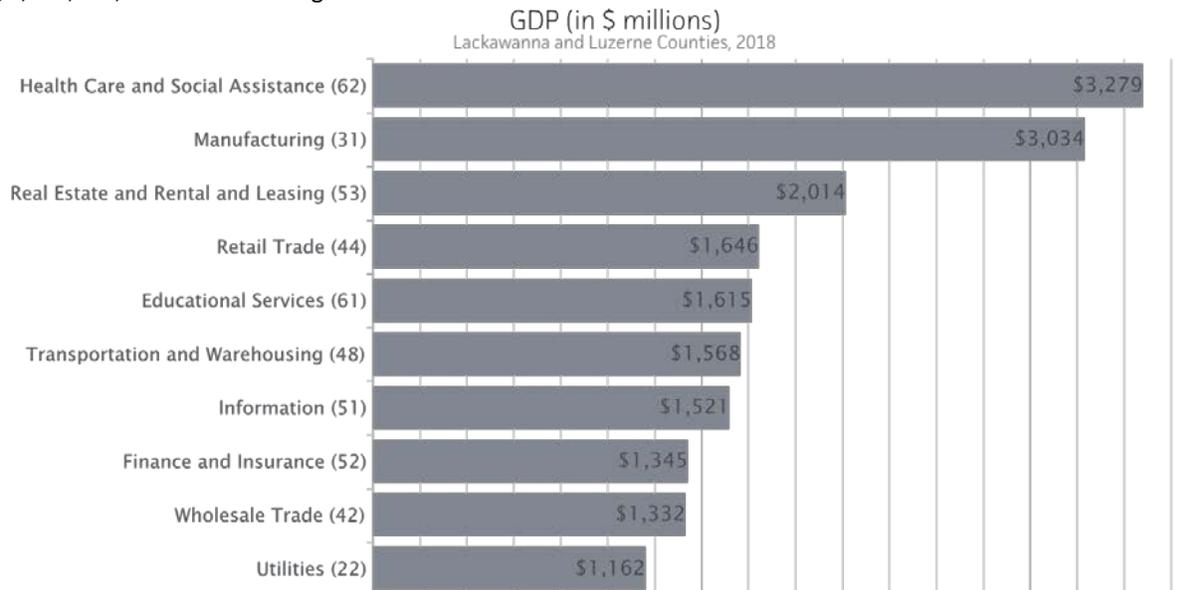
of restrictions on activity, and loose monetary and fiscal policy, such a pace of expansion seems feasible, provided that a major second Covid-19 wave is avoided. <sup>viii</sup>

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2018, nominal GDP in the Lackawanna and Luzerne Counties expanded 4.1 percent. This follows growth of 2.3 percent in 2017. As of 2018, total GDP in the Lackawanna and Luzerne Counties was \$24,133,839,000.



Of the sectors in the Lackawanna and Luzerne Counties, Health Care and Social Assistance contributed the largest portion of GDP in 2018, \$3,278,810,000. The next-largest contributions

came from Manufacturing (\$3,033,754,000); Real Estate and Rental and Leasing (\$2,013,572,000); and Retail Trade (\$1,646,005,000).



## Economic Impact

To demonstrate the impact of a 6 percent decline to GDP in 2020, The Institute created an IMPLAN model which aggregates industry by two digit NAICS and applied the 6 percent drop. This is predicated on existing data (first quarter actual estimates) and the projection of a smaller loss in the second quarter sooner due to an unanticipated rebound and modest improvements in the third and fourth quarters of 2020. This, however, is subject to change if COVID 19 rebounds more aggressively in the third and fourth quarter – in that case, growth prospects will be more pessimistic.

Regional employment was 311,315 pre-COVID with regional output in excess of \$45.5 billion. Aggregate labor income was in excess of \$15.4 billion. The effect of a 6 overall decline in GDP means that employment will drop by 29,777 in the two county area. This will cause a decrease in labor income of \$1.5 billion and the region's overall output would decrease by \$4.45 billion. The detail of the direct, indirect, and induced impact is reflected below.

Impact Summary				
Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	-17,577.1	-\$897,355,745	-\$1,385,998,905	-\$2,627,912,965
Indirect Effect	-6,489.5	-\$331,302,759	-\$511,709,290	-\$970,222,624
Induced Effect	-5,710.7	-\$291,543,439	-\$450,299,557	-\$853,787,154
<b>Total Effect</b>	<b>-29,777.3</b>	<b>-\$1,520,201,943</b>	<b>-\$2,348,007,751</b>	<b>-\$4,451,922,743</b>

As a result, our state and local governments stand to lose over \$206.1 million this year in lost tax revenue, licenses and fees under this scenario. The biggest drop is in sales tax revenue although over \$30.3 million in personal income tax is also lost.

State and Local Tax Impact by Total					
Description	Employee Compensation	Proprietor Income	Tax on Production and Imports		
			Households	Corporations	
Dividends					-\$530,690
Social Ins Tax- Employee Contribution	-\$267,584				
Social Ins Tax- Employer Contribution	-\$535,363				
TOPI: Sales Tax			-\$84,580,580		
TOPI: Property Tax			-\$64,065,506		
TOPI: Motor Vehicle Lic			-\$1,148,051		
TOPI: Severance Tax					
TOPI: Other Taxes			-\$12,302,999		
TOPI: S/L NonTaxes			-\$94,469		
Corporate Profits Tax					-\$6,468,192
Personal Tax: Income Tax					-\$30,319,047
Personal Tax: NonTaxes (Fines- Fees					-\$3,551,589
Personal Tax: Motor Vehicle License					-\$1,139,482
Personal Tax: Property Taxes					-\$644,325
Personal Tax: Other Tax (Fish/Hunt)					-\$463,180
<b>Total State and Local Tax</b>	<b>-\$802,947</b>		<b>-\$162,191,605</b>	<b>-\$36,117,623</b>	<b>-\$6,998,883</b>

The lost revenue to the federal government is equally as daunting at approximately \$333.4 million. Leading the loss is personal income tax followed by a decrease to social security/Medicare through contributions from both the employer and employee.

Federal Tax Impact by Total					
Description	Employee Compensation	Proprietor Income	Tax on		
			Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	-\$88,362,804	-\$5,392,330			
Social Ins Tax- Employer Contribution	-\$83,826,653				
TOPI: Excise Taxes			-\$12,046,192		
TOPI: Custom Duty			-\$4,995,945		
TOPI: Fed NonTaxes			\$781,820		
Corporate Profits Tax					-\$29,308,090
Personal Tax: Income Tax				-\$108,753,400	
<b>Total Federal Tax</b>	<b>-\$172,189,457</b>	<b>-\$5,392,330</b>	<b>-\$17,823,956</b>	<b>-\$108,753,400</b>	<b>-\$29,308,090</b>

Using the same economic modeling process with an evaluation of GDP loss by industry sector yields a similar overall result. This model projects the loss of 23,745 jobs and a decrease in labor income of \$1 billion.

Impact Summary				
Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	-15,512	-655,842,452	-856,912,589	-1,653,778,981
Indirect Effect	-3,215	-156,002,916	-263,517,568	-475,769,599
Induced Effect	-5,019	-218,580,194	-351,562,082	-613,303,669
<b>Total Effect</b>	<b>-23,745</b>	<b>-1,030,425,561</b>	<b>-1,471,992,239</b>	<b>-2,742,852,249</b>

Accommodations and food service which employed 23,576 pre-COVID contributed \$514 million in labor income and over \$1.4 billion to overall regional output. This model shows a loss of 5,817 jobs in this sector with nearly \$131 million in lost labor income and \$355.9 million in lost output.

Retail employed 32,771 in the region and contributed just over \$1 billion in labor income and \$2.7 billion in total output. The loss is 2,115 jobs and a decrease of \$68.5 million in labor income and a \$178 million loss to output.

Both of these industries had significant closures during 2020 due to COVID. While early signs show recovery, there will still be yearend losses.

Health and social services is another key area that impacted the economy this year. As more

preventative and primary care was reduced or eliminated due to COVID, several health care occupations were affected. This holds true for social service organizations. These organizations experienced incredible disruptions to services and fundraising (see The Institute's special report on the impact to social services). As a result, this once robust sector that employed over 46,000 and produced \$2.6 billion in labor income and over \$4.6 billion in output experienced a loss of 3,000 jobs, a \$180.1 million in labor income and a \$194.2 million in lost output.

State and local taxes loss is significant at over \$136.4 million. The personal income tax is the biggest loss exceeding \$20.5 million. Followed by a \$56.2 million reduction in sales tax.

State and Local Tax Impact by Total					
Description	Employee Compensation	Proprietor Income	Tax on		
			Production and Imports	Households	Corporations
Dividends					-\$263,638
Social Ins Tax- Employee Contribution	-\$178,770				
Social Ins Tax- Employer Contribution	-\$357,671				
TOPI: Sales Tax			-\$56,267,150		
TOPI: Property Tax			-\$42,619,518		
TOPI: Motor Vehicle Lic			-\$763,740		
TOPI: Severance Tax					
TOPI: Other Taxes			-\$8,184,559		
TOPI: S/L NonTaxes			-\$62,846		
Corporate Profits Tax					-\$3,213,291
Personal Tax: Income Tax				-\$20,579,994	
Personal Tax: NonTaxes (Fines- Fees)				-\$2,410,752	
Personal Tax: Motor Vehicle License				-\$773,459	
Personal Tax: Property Taxes				-\$437,356	
Personal Tax: Other Tax (Fish/Hunt)				-\$314,398	
<b>Total State and Local Tax</b>	<b>-\$536,442</b>		<b>-\$107,897,812</b>	<b>-\$24,515,958</b>	<b>-\$3,476,929</b>

The federal tax impact loss is also significant at \$219 million. The largest loss is to personal income tax followed by employer and employee contributions to social security and Medicare.

Description	Federal Tax Impact by Total				
	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	-\$59,034,444	-\$4,206,848			
Social Ins Tax- Employer Contribution	-\$56,003,883				
TOPI: Excise Taxes			-\$8,013,718		
TOPI: Custom Duty			-\$3,323,548		
TOPI: Fed NonTaxes			-\$520,105		
Corporate Profits Tax					-\$14,559,775
Personal Tax: Income Tax				-\$73,819,747	
<b>Total Federal Tax</b>	<b>-\$115,038,326</b>	<b>-\$4,206,848</b>	<b>-\$11,857,370</b>	<b>-\$73,819,747</b>	<b>-\$14,559,775</b>

## Summary & Conclusions

The COVID-19 pandemic is projected to have a significant economic output on regional output and local, state and federal taxes, based on estimates produced from both economic models used in this analysis. A six percent decline to GDP in 2020 is estimated to correspond with a decline in employment of nearly 30,000, and a decrease in the region’s overall output of \$4.45 billion. In addition, state and local governments stand to lose over \$206.1 million this year in lost tax revenue, licenses and fees, while approximately \$333.4 million in revenue to the federal government is projected to be lost.

An evaluation of GDP loss by industry sectors yields a similar overall result. This model projects the loss of 23,745 jobs and a decrease in labor income of \$1 billion, with large job losses in the Accommodations and food service and Retail sectors due to closures from COVID-19, and negative impacts to the Health and social services sector. This model projects a loss in state and local taxes of over \$136.4 million, and \$219 million in losses to federal taxes.

The projected losses will have a detrimental impact on the regional economy in the near term. The longer term impact will depend on the speed of the overall economic recovery. The Institute will continue to monitor the progress of the recovery and provide updated research on the on-going economic impact to our region.

# Appendix

## Definitions

### Economic Impact Analysis Methodology

The key to quantifying economic impact is understanding the concept and application of the "multiplier effect." Within the field of economics, the multiplier effect is used to determine the impact of spending or investing in a defined economy. These are the indirect effects of business operations, which make the economic impact larger than just the direct effects (actual revenue and expenses of the business) by themselves. It is based on the ripple effect — how dollars flow through the economy — and serves to quantify the economic impact and activity that results from each dollar entering, influencing, and eventually leaving a defined economy. This results in increased revenue, production, and job creation in other sectors.

### IMPLAN Software by IMPLAN Group, LLC

IMPLAN is a software system that addresses the functions of a local economy and the impact a business (for profit and non-profit) has on that economy. It generates input-output multipliers by geographic region and by industry, combined with a county / state database (using the North American Industry Classification System (NAICS), which allows the assessment of change in overall economic activity.

### Research Methods

The IMPLAN Group, LLC multipliers was used to complete the analysis. Revenue, wages, fringes, and operating expenses served as the input data. As a result, the software developed the direct, indirect, and induced impact.

### Definitions *(procured from [www.implan.com](http://www.implan.com))*

**Direct effects** -Represents the response for a given business – i.e., the organization’s direct spending on a local/regional/state level.

**Employee Compensation** - Is the total payroll cost of the employee paid by the employer. This includes wage and salary, all benefits (e.g., health, retirement) and payroll taxes (both sides of social security, unemployment taxes, etc.)

**Employment Multiplier** - Measures the number of jobs generated across all industries by the activity within a given industry. The multiplier produces an estimate of the total number of new jobs that a local economy can support in all industries due to the dollars being injected into the community.

**Indirect Business Taxes (IBT)** -IBT is the combination of excise, sales and property taxes, as well as, fees, fines, licenses and permits.

**Indirect effects** - Represents the response by all local industries caused by purchasing of goods and services.

**Induced effects** - Represents the response by all local industries to the expenditures of new household income generated by the direct and indirect effects.

**Labor Income** - All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income

**Other Property Type Income (OPTI or OPI)** - OPI represents property income minus proprietor income. It includes corporate profits, capital consumption allowance, payments for rent, dividends, royalties, and interest income.

**Output** - Output represents the value of industry production. In IMPLAN, these are annual production estimates for the year of the data set and are in producer prices. For manufacturers this would be sales plus/minus change in

inventory. For service sectors production = sales. For Retail and wholesale trade, output = gross margin and not gross sales.

**Output Multiplier** - Measures the increase in total output generated in a defined regional economy for each dollar spent by a given industry

**Proprietor Income** - Proprietor income consists of payments received by self-employed individuals and unincorporated business owners. This income also includes the capital consumption allowance and is recorded on Federal Tax form 1040C.

**Value Added** - The difference between an industry's and an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus (formerly "other value added").

**Value-Added (Earnings) Multiplier** - Measures the earnings (purchasing power) that an industry generates, through payroll and the multiplier effect, for households employed by all industries within a defined area. Consequently, the Value-Added impact represents the amount of dollars that aggregate households in a given area will gain in household income based on the dollars through the organization's operating expenditures.

## Endnotes

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<sup>i</sup> A Potential Influenza Pandemic: Possible Macroeconomic Effects and Policy Issues. Congressional Budget Office. 27 July 2006.

<sup>ii</sup> JobsEq

<sup>iii</sup> JobsEq

<sup>iv</sup> JobsEq

<sup>v</sup> Drop in U.S. GDP. Barrons. May 2020. Retrieved from <https://www.barrons.com/articles/50-drop-in-us-gdp-coronavirus-51586893323>.

<sup>vi</sup> GDP is now projected to fall nearly 53 percent in the second quarter according to a federal gauge. CNBC. Retrieved from <https://www.cnbc.com/2020/06/02/gdp-is-now-projected-to-fall-nearly-53percent-in-the-second-quarter-according-to-a-fed-gauge.html>

<sup>vii</sup> Chmura Economics, July 2020 Weekly Newsletter.

<sup>viii</sup> Corona Virus Watch. Oxford Economic. July 14, 2020.