

The COVID-19 Pandemic in Florida and the South Florida Area Economic Impact Assessment, May 2021

About the South Florida Regional Planning Council (SFRPC)

The SFRPC, formed in 1974, created a consistent geographic framework for Broward, Miami-Dade, and Monroe counties within which planning and technical assistance activities could be developed and implemented. The Southeast Florida Economic Forecasting Partnership (The Partnership) offers technical assistance to communities and organizations to predict how policy decisions or economic events can impact the economy at the county, region, and state level.

Economic impact analysis supports local authorities in making economic development investment decisions by providing consistent assessments of the magnitude and characteristics of the economic benefits related to those decisions. The Partnership was formed in 2003 and continues today with the participation of the South Florida Regional Planning Council.

About the Tampa Bay Regional Planning Council (TBRPC)

The TBRPC supports local government initiatives and projects with planning services and economic analysis throughout Florida.

The TBRPC provides economic analysis services through the Tampa Bay Economic Development District and the Regional Economic Analysis Program. TBRPC uses state-of-the-art computable general equilibrium and input-output models to assist its partner agencies in assessing the impacts of potential job-creating projects and investments, as well as the economic analysis of environmental and public policy issues.

Executive Summary

Coronavirus disease (Covid-19) is a novel infectious respiratory disease that spreads from person to person and has infected more than 2.2 million people and caused more than 35,000 deaths in Florida as of April 29, 2021.¹ Because of the number of Covid-19 cases and deaths in the state, Florida has vaccinated over 8.7 million people as of April 25, 2021.² The United States and Florida have enforced social distancing and economic shutdowns to stop the spread of the disease. Since March 2020, economic shutdowns from Covid-19 caused the U.S. gross domestic product (GDP) to contract by 9.5% (a -33% annualized rate of change) in one quarter, and the unemployment rate increased to 15% (a 10% increase) in one quarter. Since the initial peak of the Covid-19 crisis, the GDP expanded by 9% (a 38% annualized rate of change) in Q1 2020. In Q1 2021, the GDP increased by 3% (an 11% annualized rate of change).³

Stay-at-home orders, closures of non-essential businesses, and severe travel restrictions due to Covid-19 **decreased employment** in Florida. Jobs in Broward, Miami-Dade, and Monroe counties decreased by more than 394,000 (-16%) during the peak of the Covid-19 crisis from Q3 – Q4 2020. However, many of the individuals unemployed during the Covid-19 shutdown are returning to work. Over 147,000 jobs (7%) have returned from Q1 2020 – Q3 2021.⁴

¹ <https://floridahealthcovid19.gov/#latest-stats>

² <https://floridahealthcovid19.gov/vaccines/>

³ <https://fred.stlouisfed.org/series/GDP>

⁴ <https://www.bls.gov/lau/#tables>

Social distancing and employment changes also have had different **impacts on mobility**. In May 2020, three of the most notable mobility changes were visits to parks, workplaces, retail and recreation, and residential locations in Florida. The mobility changes are compared to a baseline month, also known as the normal value for the month calculated by Google based on medium values from previous periods before the Covid-19 shutdown. In April 2020, average workplace trips decreased by 46%. In April 2021, average workplace trips decreased by 24%. Trips to workplaces and recreation and retail places were still less than the average but becoming more modest.⁵

The job loss during Covid-19 and other uncertainties caused decreases in consumer spending and increases in savings rates throughout the U.S. and Florida, especially in Miami-Dade County, where there was a \$6 billion (-39%) decrease in sales in Q4 2020. After the initial sales decrease in Q4 2020, all counties' retail sales increased by \$5.2 billion (30%) from Q4 to Q2 2020 when businesses opened after prolonged shutdowns. South Florida businesses generated over \$88 billion in total taxable sales at the end of 2020. Comparing the total taxable sales in 2020 to the corresponding total taxable sales in 2019 shows a decrease of \$13 billion (-13%) in 2020. Accordingly, even though the increase in sales from Q4-Q2 was not enough to offset the stall in sales in Q4, a general trend of increased spending is beneficial for the region.⁶ As people spend, they generate activity that is likely to encourage job growth, which will ease the unemployment gap created by Covid-19 and further compound the consumption benefits as those that gained jobs now consume more. Therefore, TBRPC anticipates that the increase in employment and spending, seen at the end of 2020 for the rest of Florida, will continue through 2021 for South Florida.

Recovery forecasts have become more optimistic in recent months. The Conference Board, a nonprofit entity that provides reports to help the global business community navigate current economic, health, and social events, predicts that U.S. gross domestic product (GDP) will rise 6.4% in 2021. The cause of this rapid expansion will be because of increases in consumer spending, increasing vaccination rates, business reopenings, and the CARES Act III aid.⁷ The Federal Reserve Bank of San Francisco expects U.S. gross domestic product (GDP) to increase by 6.6% in 2021.⁸

This report analyzes the direct and indirect impacts caused by jobs lost from Covid-19 and projects the future recovery of those jobs in Broward, Miami-Dade, and Monroe counties. The REMI (Regional Economic Models, Inc) PI+ model was used to project South Florida counties' future economic recovery based on jobs lost and gained in 2020 and 2021 compared to a pre-covid-19 forecast control. This scenario indicates that Covid-19 reduced total employment by 200,000 (-7%) jobs in 2020, which decreased gross domestic product (GDP) by about \$4 billion (-2%). **Since vaccinations and the reopening of businesses is expected to continue throughout 2021, South Florida counties are expected to recover about 112,000 jobs (4%) in 2021, which are estimated to increase the region's gross domestic product (GDP) by \$19 billion (7%) in 2021.** Although the South Florida economy is recovering, Covid-19 slowed the growth of the region. When comparing the March RSQE 2021 forecast to the Pre-Covid-19 forecast, **South Florida job levels in 2020 were about 300,000 jobs (-8%) less than what was estimated if Covid-19 never happened, which results in the GDP being \$15 billion (-5%) less in 2020 than was expected before the pandemic. The compounded impacts seen in 2020 will continue into 2021.**

About Covid-19

Coronavirus disease (Covid-19) is a novel, highly contagious respiratory disease. Covid-19 symptoms include fever, cough, difficulty breathing, and loss of taste or smell, and symptoms can range from being very mild to potentially

⁵ <https://www.google.com/covid19/mobility/>

⁶ https://floridarevenue.com/taxes/taxesfees/Pages/sales_tax.aspx

⁷ <https://conference-board.org/research/us-forecast>

⁸ <https://www.frbsf.org/economic-research/publications/fedviews/2021/april/april-8-2021/>

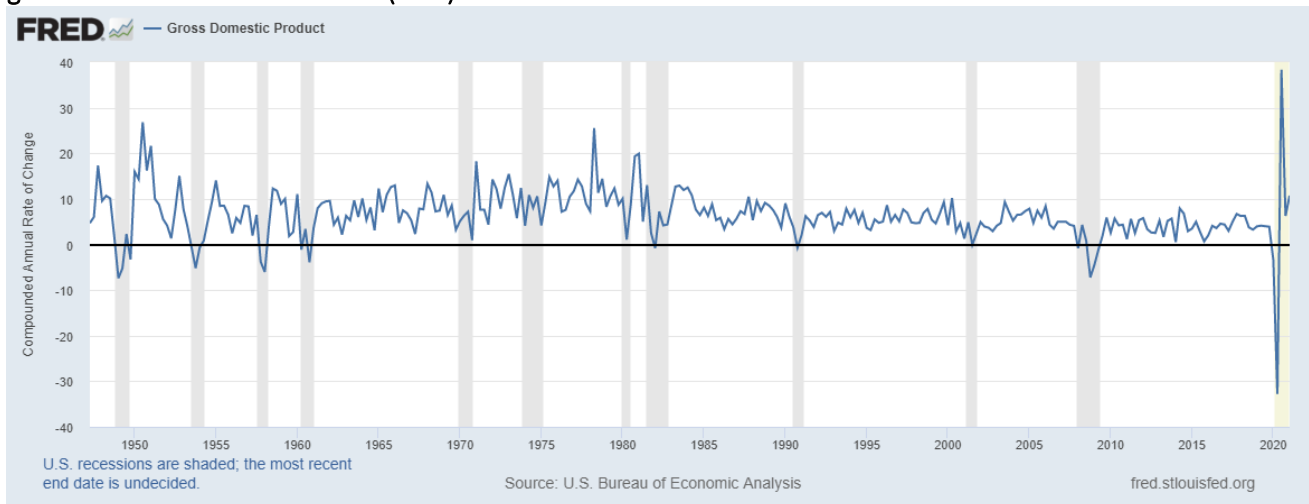
deadly. Older adults and people with severe underlying medical conditions are at higher risk for developing more serious complications from Covid-19.

Covid-19 has infected more than 32 million people and killed more than 571,000 people in the U.S.⁹ According to the Florida Department of Health, more than 2.2 million people have been diagnosed with Covid-19 in Florida. The disease has caused over 35,000 deaths as of April 29, 2021¹⁰. Vaccinations, , proper nutrition, and sanitary practices are critical resources for preventing the further spread of Covid-19 and allowing Floridians to return to their regular pace of life. According to the Florida Department of Health, 8.7 million people have received vaccinations in Florida as of April 25, 2021.¹¹

U.S. health officials encouraged social distancing beginning in early March 2020 to stem the spread of the virus, and large segments of the economy shut down or shifted to remote operation.¹² Social distancing will drive impacts to consumer spending and business productivity as well as supply chain disruptions. Shutdowns caused sharp declines in travel, retail sales, medical appointments, and many other activities and increases in layoffs. This halt in travel and consumption and the increase in unemployment have generated indirect impacts on the service economy and severe fiscal impacts on state and local governments.

Pandemic-related Impacts of business reduction, shutdowns, and closures along with travel restrictions, and school and daycare closures on the U.S. economy broke historical records earlier last year. In Q4 of 2020, the U.S. gross domestic product (GDP) contracted by 9.5% (a -33% annualized rate of change) in one quarter, and the unemployment rate increased to 14.8% (a 10.4% increase) in one quarter. Since the initial peak of the Covid-19 crisis, the gross domestic product (GDP) expanded by 8.5% (a 38% annualized rate of change) in Q1 2021. The unemployment rate decreased to 6% (a -0.2% decrease) in March 2021. Although the unemployment rate continues to trend down, it is still 2.5 percentage points higher than its pre-pandemic level in February 2020.¹³

Figure 1: Gross Domestic Product (GDP)



Source: Federal Reserve Bank of St. Louis (FRED), 1947-2021. <https://fred.stlouisfed.org/series/GDP>

⁹ <https://covid.cdc.gov/covid-data-tracker/#datatracker-home>

¹⁰ <https://floridahealthcovid19.gov/#latest-stats>

¹¹ <https://floridahealthcovid19.gov/vaccines/>

¹² <https://www.healthaffairs.org/>

¹³ <https://www.bls.gov/news.release/pdf/empst.pdf>

The Conference Board released the U.S. Economic Outlook with three forecasts for the U.S. economy on March 10, 2021. In the base case forecast, the Conference Board projects that employment will rebound through consumption and that gross domestic product (GDP) will rise 6.4% in 2021.¹⁴ Similarly, the Federal Reserve Bank of San Francisco (FRBSF) expects a year-to-year gross domestic product (GDP) growth of 6.6% in 2021 and the U.S. to return to pre-pandemic levels by 2022 and 2023¹⁵. The Conference Board and FRBSF add that the increase in job growth further supports the economic recovery claims and will further compound the recovery in employment and gross domestic product (GDP).

The South Florida Regional Planning Council (SFRPC), in partnership with the Tampa Bay Regional Planning Council (TBRPC), prepared an analysis of Covid-19's economic impacts and the future recovery for Broward, Miami-Dade, and Monroe counties with updates as the situation develops. This report discusses pandemic impacts on South Florida employment and consumer spending, a summary of the current situation, and a look at the near future.

Job Changes Due to Covid-19

In Florida, Covid-19 had a severe impact on employment. The leisure and hospitality sectors have lost the most jobs since January 2020. Similarly, education services and government sector jobs have lost the second and third most jobs since January 2020.¹⁶ In the South Florida region, jobs decreased by more than 394,000 (-16%) during the peak of the Covid-19 crisis from Q3 – Q4 2020. However, many of the individuals unemployed during the Covid-19 shutdown are returning to work. 147,000 jobs (7%) have returned from Q1 2020 – Q3 2021.¹⁷ Table 1 summarizes the change in the number of jobs from January 2020 through March 2021 by quarter and county.

Table 1: Change in Jobs by Quarter and County

County	Q3-20		Q4-20		Q1-20		Q2-20		Q3-21		Total Job Change	
Broward	-20,172	-2%	-115,339	-12%	56,681	7%	5,267	1%	28,388	3%	-43,176	-4%
Miami-Dade	-114,215	-8%	-139,690	-12%	92,784	8%	-22,416	-2%	-17,745	-1%	-201,282	-15%
Monroe	-16	-0.03%	-4,189	-9%	2,332	5%	2,685	6%	-2,737	-6%	-1,925	-4%
Total	-134,404	-6%	-259,218	-11%	153,797	8%	-14,462	-1%	7,906	0.4%	-246,383	-10%

Source: U.S. Bureau of Labor Statistics, 2020-2021. <https://www.bls.gov/lau/#tables>

As seen in Table 1, Broward, Miami-Dade, and Monroe counties still have about 246,000 fewer jobs (10% less than before Covid-19) at the end of Q3 2021 than before the Covid-19 economic shutdown in Q3 2020. The U.S. Bureau of Labor Statistics data indicates that many people have returned to work and will continue to return to work through 2021. Changes in employment cause changes in mobility and consumption. For example, as businesses hire employees back, more people will travel to work and have disposable income to spend. When people start spending more money, businesses compound the recovery in employment by hiring more employees to account for increased demand for services and goods as consumption increases.

¹⁴ <https://conference-board.org/research/us-forecast>

¹⁵ <https://www.frbsf.org/economic-research/publications/fedviews/2021/april/april-8-2021/>

¹⁶ <https://fas.org/sgp/crs/misc/R46554.pdf>

¹⁷ <https://www.bls.gov/lau/#tables>

Mobility as an Indicator of the Economy After Covid-19

Social distancing, a mostly voluntary minimization of contact between members of the public to stem the infection rate of the disease, was encouraged across the country in March 2020. Social distancing caused an unprecedented shift in mobility, with significant reductions in the use of transit stations, trips to retail, recreation, workplaces, and to see family and friends. Using cell phone location history data collected by Google Maps and made publicly available by Google, Table 2 summarizes the percent change in trips to location types in April 2020 and 2021.¹⁸

Table 2: Google Mobility Change by Percentage for April 2020 & 2021 in the U.S., Florida, & SFRPC Counties

Category	Year	Nation	State	Counties		
		United States	Florida	Broward	Miami-Dade	Monroe
Retail & Recreation	2020	-41%	-45%	-48%	-51%	-69%
	2021	-8%	-10%	-17%	-16%	-13%
Grocery & Pharmacy	2020	-14%	-22%	-24%	-28%	-44%
	2021	-2%	-4%	-11%	-8%	-8%
Parks	2020	-13%	-50%	-58%	-71%	-73%
	2021	22%	-10%	-20%	-35%	-18%
Transit Stations	2020	-50%	-58%	-68%	-65%	-70%
	2021	-25%	-22%	-33%	-33%	-8%
Workplaces	2020	-47%	-46%	-49%	-49%	-49%
	2021	-26%	-24%	-28%	-26%	-17%
Residential	2020	18%	18%	8%	24%	18%
	2021	6%	5%	23%	7%	2%

Source: Google Mobility, 2020-2021. <https://www.google.com/covid19/mobility/>

In 2020, three of the most notable mobility changes were visits to workplaces, retail and recreation, and residential locations in Florida. In April 2020, the average workplace mobility decreased 46%, and the average retail and recreation mobility decreased 45%. The average mobility to residential locations increased 18% in 2020. In April 2021, Florida has seen increased employment and loosening social distancing restrictions, but there are still notable mobility changes. Average workplace mobility decreased 24%, and average retail and recreation mobility decreased 10%. Average mobility in residential locations increased 5%. Although there are still decreases in mobility across many categories of places in Florida, decreases in mobility are becoming more and more modest, which indicates that more people are continuing to work from home even though social distancing is ending and more people are beginning to resume other normal activities.

Changes to Taxable Sales Due to Covid-19

Social distancing and job losses from Covid-19 caused a shift in sales patterns. In March 2020, the personal savings rate rose 28% in the U.S. as jobs became less secure, people received federal benefits, and people spent more time at home.¹⁹ Similarly, most of the money spent during 2020 was spent online, instead of at brick-and-mortar locations, with nearly \$900 billion spent at online retailers in 2020.²⁰ In South Florida, from Q3 – Q4 2020, there was a sharp decline in consumption across all categories aside from home utilities, such as plumbing, electrical, and air-conditioning services. However, since Q1 2020, spending has increased across all counties.

¹⁸ <https://www.google.com/covid19/mobility/>

¹⁹ <https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=76#reqid=19&step=3&isuri=1&1921=survey&1903=76>

²⁰ <https://mcdsdev.prod.acquia-sites.com/en/recovery-insights/commerce-e-volution>

Decreasing unemployment throughout the counties causes this increase in consumption because as more people return to work, more people have disposable income to spend.

Table 3 indicates the Florida Department of Revenue 2019 and 2020 taxable sales numbers for Broward, Miami-Dade, and Monroe counties by quarter. Table 4 shows the change in taxable sales numbers by quarter in each county over 2020.

Table 3: 2020/2019 South Florida Taxable Sales in Millions of Dollars

County	Q3	Q4	Q1	Q2	Total in 2020	Total in 2019	Difference in Sales from 2019 to 2020	
Broward	\$10,775	\$7,405	\$8,729	\$9,345	\$36,259	\$40,093	-\$3,834	-10%
Miami-Dade	\$15,348	\$9,329	\$11,079	\$12,317	\$48,074	\$56,331	-\$8,257	-15%
Monroe	\$1,104	\$526	\$852	\$770	\$3,251	\$3,831	-\$580	-15%
Total	\$27,228	\$17,260	\$20,659	\$22,432	\$87,580	\$100,255	-\$12,676	-13%

Source: Florida Department of Revenue, 2020. https://floridarevenue.com/taxes/taxesfees/Pages/sales_tax.aspx.

*Currency figures in current \$

Table 4: South Florida Changes in Taxable Sales by quarter in 2020 in Millions of Dollars

County	Q3		Q4		Q1		Q2		Total Change in Sales in 2020	
Broward	\$1,153	11%	-\$3,370	-31%	\$1,323	18%	\$616	7%	-\$278	-3%
Miami-Dade	\$1,789	12%	-\$6,019	-39%	\$1,750	19%	\$1,238	11%	-\$3,031	-20%
Monroe	\$348	32%	-\$578	-52%	\$326	62%	-\$82	-10%	-\$335	-30%
Total	\$3,290	14%	-\$9,968	-58%	\$3,399	16%	\$1,772	9%	-\$4,796	-18%

Source: Florida Department of Revenue, 2020. https://floridarevenue.com/taxes/taxesfees/Pages/sales_tax.aspx.

*Currency figures in current \$

The data shows that taxable sales numbers decreased from Q3 to Q4 2020 in all counties, especially Miami-Dade County, where there was over a \$6 billion (-39%) decrease in sales in Q4 2020. ²¹After the initial sales decrease in Q4 2020, all counties' retail sales increased by \$5.2 billion (30%) from Q4 2020 to Q2 2021. The total taxable sales for South Florida were over \$88 billion at the end of 2020. Comparing the total taxable sales in 2020 to the corresponding total taxable sales in 2019 shows a decrease of \$13 Billion (-13%) in 2020. Accordingly, even though the increase in sales from Q4-Q2 was not enough to offset the stall in sales in Q4, a general trend of increased spending is beneficial for the region. As people are spending, they are generating activity that is likely to encourage job growth, which will ease the unemployment gap created by Covid-19 and further compound the consumption benefits as those that gained jobs now consume more. Therefore, TBRPC anticipates that the increase in employment and spending, seen at the end of 2020, will continue through 2021.

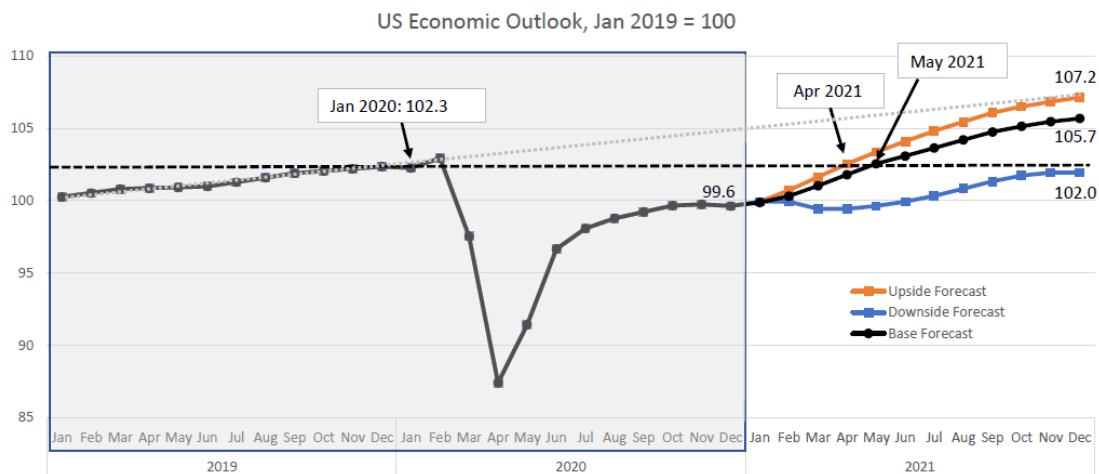
Timing of a Recovery in the U.S.

The Conference Board released a U.S. Economic Outlook with three forecasts for the U.S. economy on March 10, 2021. In the base case forecast, the Conference Board projects that employment will rebound through

²¹ https://floridarevenue.com/taxes/taxesfees/Pages/sales_tax.aspx

consumption and that gross domestic product (GDP) will rise 6.4% in 2021.²² This forecast assumes that Covid-19 cases will decrease and that social distancing restrictions will be eliminated in the first quarter of 2021. The Conference Board forecast also assumes that vaccinations will be widely available by early 2021 and universally available by early 2022. Figure 2 shows the U.S. Economic Outlook with the three forecast scenarios. The base case scenario described above is the black, extended line. TBRPC will analyze the direct and indirect job loss using an employment change scenario like the base case scenario.

Figure 2: The Conference Board U.S. Economic Outlook



Source: *The Conference Board Base Case Economic Outlook, 2019-2020-2021*. <https://conference-board.org/research/us-forecast>

REMI Analysis of Employment Change

This report analyzes the direct and indirect impacts caused by jobs lost from Covid-19 and projects the future recovery of those jobs in Broward, Miami-Dade, and Monroe counties. The SFRPC and TBRPC used a Pre-Covid-19 baseline forecast as a control. The Pre-Covid-19 baseline is not an official REMI forecast but could be used as a reasonable baseline, assuming COVID-19 never happened. To account for the impacts of Covid-19, the March RSQE 2021 updated national forecast was used. The March RSQE 2021 Forecast is based on the 2019-2020 historical data from the U.S. Bureau of Economic Analysis released on January 28, 2021, The U.S. Economic Outlook for 2020-2022 from the University of Michigan's Research Seminar in Quantitative Economics (RSQE) released on February 19, 2021, and The Budget and Economic Outlook: 2021 to 2031 from CBO released in January and February 2021.

The March RSQE 2021 Update represents the economic impacts across the nation caused by Covid-19 and the forecasted recovery. This scenario indicates that Covid-19 reduced 208,875 jobs (-7%) in South Florida in 2020, which decreased gross domestic product (GDP) by about \$4 billion (-2%). Since vaccinations and reopenings continue to happen throughout 2021, South Florida counties will recover 112,395 jobs (4%) in 2021, which are estimated to increase the region's gross domestic product (GDP) by \$19 billion (7%) in 2021. Although the South Florida economy is recovering, Covid-19 stunted the growth of the region.

Tables 5 and 6 present the differences between the March RSQE forecasted results and the Pre-Covid-19 forecasted results. In other words, the differences show how much Covid-19 slowed economic growth. Covid-19

²²<https://conference-board.org/research/us-forecast>

reduced total employment by 262,581 (-8%) less in 2020 than was expected before Covid-19, which resulted in the gross domestic product (GDP) being \$15 billion (-5%) below the forecasted gross domestic product (GDP) before Covid-19.

Job loss has a compounded impact on the economy because as individuals lose jobs and thus income, they cannot consume and contribute to gross domestic product (GDP). When individuals no longer have the income to spend, demand for goods decreases, and more jobs are lost. Although South Florida's counties will recover 112,395 jobs (4%) in 2021, the REMI Model estimated that total employment is still 194,579 jobs (-6%) below what employment levels were supposed to reach before the pandemic. The compounded impacts seen in 2020 will cause South Florida gross domestic product (GDP) to be 9 billion (-3%) less in 2021 than was expected before Covid-19.

Table 5: Summary of Employment Loss in 2020 (REMI)

Category	Units	Counties							
		Broward		Miami-Dade		Monroe		Total	
Total Employment*	Individual (Jobs)	-102,928	-8%	-150,530	-8%	-9,123	15%	-262,581	-8%
Labor Force*	Individual (Jobs)	-8,310	-1%	-13,413	-1%	-1,726	-4%	-23,449	-1%
Gross Domestic Product	Millions of Current Dollars	-\$5,666	-5%	-\$8,574	-5%	-\$702	-12%	-\$14,922	-5%
Personal Income	Millions of Current Dollars	\$2,892	3%	\$4,990	3%	-\$310	-4%	\$7,573	3%

Source: TBRPC REMI PI+ (2021) *Currency Figures in current \$

Table 6: Summary of Employment Recovery in 2021 (REMI)

Source: TBRPC REMI PI+ (2020) *Currency Figures in current \$

*The number of people in the labor force, i.e., employed or seeking work; calculated with participation rates by

Category	Units	Counties							
		Broward		Miami-Dade		Monroe		Total	
Total Employment	Individual (Jobs)	-79,330	-6%	-106,825	-0.1%	-8,424	-13%	-194,579	6%
Labor Force*	Individual (Jobs)	-10,978	-1%	-16,780	-0.01%	-2,492	-6%	-30,249	-1%
Gross Domestic Product	Millions of Current Dollars	-\$3,584	-3%	-\$4,629	-0.02%	-\$703	-12%	-\$8,904	-3%
Personal Income	Millions of Current Dollars	\$1,789	2%	\$4,749	0.03%	-\$419	-6%	\$6,118	2%

age cohort. Other Definitions found in Appendix.

Summary and Conclusions

As residents receive Covid-19 vaccinations across Florida and pandemic restrictions are loosened, a recovery in both jobs and sales in the South Florida counties is apparent. With increased employment, individuals will now have increased disposable income, and consumption will increase throughout the region. The compounded economic impacts from increased employment and consumption will further help Broward, Miami-Dade, and Monroe counties recover through 2021. SFRPC and TBRPC staff will be awaiting future data to watch for trends as they develop.

Appendix: About REMI PI+

REMI PI+ is an economic modeling tool that supports economic and demographic analysis of many different policy issues. In this case, TBRPC used REMI PI+ to analyze how COVID-19 impacts the Tampa Bay Area and Florida economies. The REMI model builds upon decades of research and various data sources, econometric models, and an input-output model that tracks the flow of spending through the economy from consumer or producer spending to all other sectors of the economy.

REMI PI+ Model Structure

Figure 1 The REMI Model

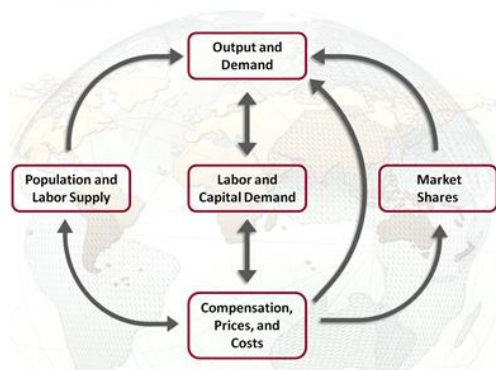


Figure 1 depicts the interactions within the REMI model among five economic “blocks.” Imagine a factory (the Output block) that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. Population and Labor Supply are shown as contributing to demand and to wage determination in the product and labor market. The feedback from this market shows that economic migrants respond to labor market conditions. Demand and supply interact in the Wage, Price and Profit block. Once prices and profits are established, they determine market shares, which along with components of demand, determine output.

The REMI model brings together all the above elements to determine the value of each of the variables in the model for each year in the baseline forecasts. The model includes all the inter-industry relationships that are in an input-output model in the Output block but goes well beyond the input-output model by including the relationships in all the other blocks shown in figure 5.4.

In order to broaden the model beyond the standard Input-Output methodology, it was necessary to estimate key relationships. This was accomplished by using extensive data sets covering all areas in the country. These large data sets and decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available.

The model has strong dynamic properties, which means that it forecasts not only what will happen but when it will happen. This results in long-term predictions that have general equilibrium properties, which means that the

long-term properties of general equilibrium models are preserved without sacrificing the accuracy of event timing predictions and without simply taking elasticity estimates from secondary sources.

Glossary

Employment - estimates of the number of jobs, full-time plus part-time, by place of work for all industries. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included.

Total Labor force- The number of people in the labor force, i.e., employed or seeking work; calculated with participation rates by age cohort.

Personal Income - Income received by persons from all sources. It includes income received from participation in production as well as from government and business transfer payments

Gross Domestic Product - The market value of goods and services produced by labor and property in the United States, regardless of nationality.

Taxable sales number - Total revenue divided by one plus your local sales tax amount.

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