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| Father and son bonding |
| **Economic & Fiscal Effects of Remote Workers in Florida**  **Client: Florida Department of Economic Opportunity (DEO)** |
| |  |  |  | | --- | --- | --- | | Patrick Beck, Cassidy Shore, & Haileleul Tarekegn | 5/10/21 | ECO5973L | |



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**Introduction**

This paper will focus on analyzing both the economic and fiscal effects of remote work on various industries, the labor force, and local governments within the state of Florida. The growth of remote work in Florida has been recently accelerated by the Covid-19 pandemic. Many of the recent transplants to Florida are moving here for several different reasons; escaping harsh lockdown restrictions, the burden of high taxes, differences in the cost of living, or the ability to work remotely, etc. To properly estimate the economic and fiscal effects of remote workers in Florida, we must first analyze trends related to remote work within the state that existed prior to this recent migration of the labor force. Because remote work data and reason for relocation data is not collected by any state or federal agency, we will rely predominantly on third-party survey data to estimate the effects of remote workers within the state.

Regarding the specific industries in Florida that will be studied, this paper will focus on industries that already have a high percentage of remote workers or possess certain job characteristics that have the potential to be done remotely without a loss of efficiency or productivity. The analysis of the effects of remote work on the labor force will focus on income effects, demographic comparisons between groups, and changes to the employment rate. The effects of remote work on local governments within Florida will be focused on various sources of government revenues like sales taxes, property taxes, and corporate taxes as well as fiscal spending programs.

**Historical Background**

The trend towards remote work and telecommuting is not a recent phenomenon. Industries and employees have been trying to implement remote work solutions for many decades prior to the Covid-19 pandemic. The ability for employees to work remotely has been primarily a function of technological advancements within our society. According to journalist Linda Dishman for the publication *Fast Company*:

“The advancement of technology further allowed workers to use their homes for a dual purpose. Think: alongside the rise of cars to commute from the suburbs to offices in the city came the oil crisis of the early 1970’s… That’s when Jack Nilles was working remotely on a complex NASA communication system that he coined the word “telecommuting.” He went on to coauthor The Telecommunications-Transportation Tradeoff, which proposed working from home as a solution to traffic tangles as well as limited resources” (Dishman, 2019).

The next decade was the beginning of the computer age, which further advanced the technological capabilities of firms and their employees and provided exponential increases to employee productivity. These same technology firms were some of the first to implement large-scale remote work policies for their labor force. According to Dishman:

“In the 1980s, companies began officially experimenting with flexible work. For example, IBM installed “remote terminals” in several employees’ homes during that time, and the program flourished to the point that “by 2009, 40% of IBM’s 386,000 global employees already worked at home” (Dishman, 2019).

This was a precursor to the similar patterns for remote work that is currently taking place in the tech industry today. While it sounds like remote work was a large success, columnist David Streitfeld of the *New York Times* adds an important caveat to the historical review of IBM’s remote work policies. He explains the reason for his pessimistic view of remote work, writing:

“...IBM came to a similar decision. In 2009, 40 percent of its 386,000 employees in 173 countries worked remotely. But in 2017, with revenue slumping, management called thousands of them back to the office. Even as Facebook, Shopify, Zillow, Twitter and many other companies are developing plans to let employees work remotely forever, the experiences of Mr. Laermer and IBM are a reminder that the history of telecommuting has been strewn with failure. The companies are barreling forward but run the risk of the same fate” (Streitfeld, 2020).

So, it seems that remote work may be more of a temporary incentive or allowance by corporate management rather than a permanent strategic policy. Thoroughly examining the economic and fiscal effects will help determine if remote work is a practical, long-term solution for different industries in Florida.

The private sector was not the only participant in the remote work experiment in the past few decades. The public sector also became involved over a decade ago when the government used legislation to capture the efficiency and fiscal savings effects that remote work can provide. The federal, state, and local governments employ roughly 20% of the nation’s workforce, so this should provide a large sample from which to study the economic and fiscal effects of remote work.  Dishman also writes about the government role in her article regarding the history of remote work in America, stating:

“By 2010, the Government had passed the Telework Enhancement Act, which sought to make telecommuting more secure and effective for Federal employees. The most recent Census report found that 13.4 million people (out of a workforce of 142 million) worked from home, which represented an increase of 4.2 million in a little over a decade” (Dishman, 2019).

**Current Events**

Since the beginning of the pandemic, government mandated closures of “non-essential” businesses have caused many employees to work from their home or another remote location leading to a substantial increase in the number of remote workers in the state of Florida. Prior to the Covid-19 pandemic, approximately 6.2% of the labor force in the state of Florida worked remotely compared to the national average of 5%. According to Richard Florida, a professor at the University of Toronto, “...before the pandemic, between 2-and-15 percent of the workforce were working remotely. Currently, it’s half-to-two-thirds of the workforce.” The growth witnessed in remote work caused by the pandemic is unlikely to reverse itself back to pre-pandemic levels once the economy returns to normal. Results of a survey conducted by CareerCloud show that Florida is expected to experience a 24.3% growth in remote jobs by the year 2028.

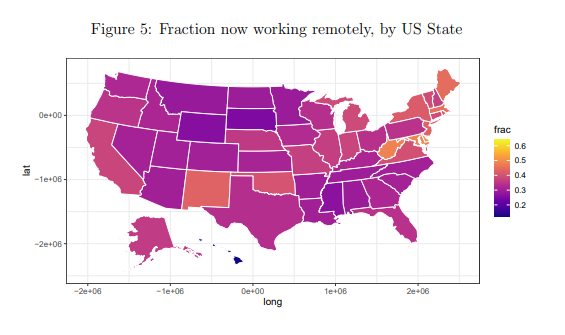


Figure   
Source: NBER Working Paper

Now that both employers and employees have become acclimated to the possibilities of remote work and finding that there is no noticeable decrease in productivity, neither party seems interested in returning to the pre-pandemic status quo. The demand for remote work or hybrid model positions moving forward will largely be driven by the labor force. According to a recent article about remote work in the *Tampa Bay Times*:

“A study last month by Alexander Bick, an economist at Arizona State University, and two colleagues found that nearly 13 percent of workers they surveyed plan to work from home full time after the pandemic — nearly double the 7.6 percent who did so in February 2020. An additional 25 percent expect to do so at least one day a week, up from 17 percent before the pandemic” (Krisher et al., 2021).

These significant structural changes to the composition of the workforce will undoubtedly have multiple direct and indirect effects across the entire economy of Florida. This hypothesis is supported by recent survey work conducted by the consulting firm PricewaterhouseCoopers:

“Company executives overwhelmingly report that remote work has succeeded during the pandemic, according to research by consulting firm PwC. About 55 percent said they envision allowing continued remote work, according to the survey of 133 executives of mostly large companies.” (Krisher et al., 2021).

The results of the PwC survey provide a good indication of the direction firms and employees are moving with regards to remote work in the near future and each groups expectation. While it appears that the trend towards remote work is likely permanent, the questions of which industries and workers will benefit still remain in addition the effects on the local governments where remote work will be implemented at the highest levels. This further underscores the need for this research regarding the economic and fiscal effects of remote work within Florida.

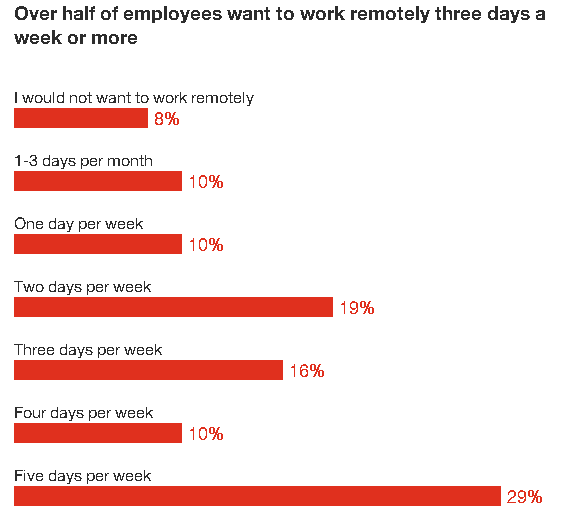


Figure 2  
 Source: PwC US Remote Work Survey January 12, 2021. Base: 1,200 US office workers

To properly analyze the various effects that remote work will have on the industries and labor force of Florida, the number of remote workers residing within the state for local employers versus out-of-state employers must be properly extrapolated from the currently available data. According to a report produced by the Florida Legislature’s Office of Economic and Demographic Research, “Florida’s population growth of 387,479 between April 1, 2019 and April 1, 2020 was the strongest annual increase since 2005, immediately prior to the collapse of the housing boom and the beginning of the Great Recession” (EDR, 2020).

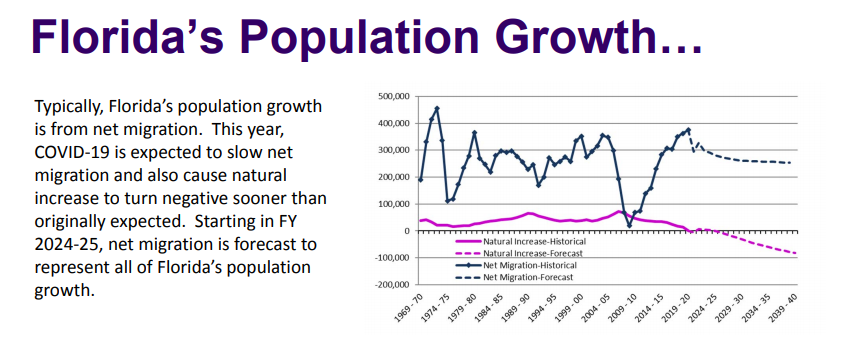


Figure   
Source: Florida Legislature Office of Economic and Demographic Research, 12/30/2020

The labor demand for remote workers varies by industry and job function. Industries with careers that require higher educational attainment typically have a higher positive relationship to the percentage of employees that can work remotely. According to an article published in the *Tampa Bay Times*:

“In legal services, for example, remote-work postings for jobs including paralegals and legal assistants jumped from under 5 percent in the second half of 2019 to 16 percent in the second half of 2020, according to Indeed data. In banking and finance, for such jobs as actuaries and loan underwriters, remote-work postings surged from 4 percent to nearly 16 percent. For mental health therapists, they rose from 1 percent to nearly 7 percent” (Krisher et al., 2021).

By identifying which specific industries and careers are the most compatible with remote work, we will be able to isolate and identify the economic and fiscal effects of remote work on each individual industry as well as the labor force.

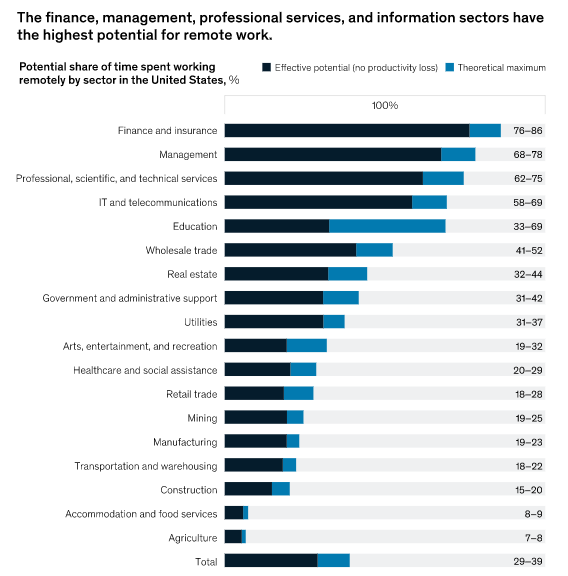


Figure   
Source: https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-tasks-800-jobs-and-nine-countries

The effects of remote work are not predicted to be evenly distributed across the labor force. To properly study the economic and fiscal effects on the labor force in Florida, any analysis must consider differences between various demographic groups including, but not limited to, age, gender, race, educational attainment, industry, etc. By accounting for these variables, the remaining associated effects can likely be attributed to remote work. According to economic researchers at the National Bureau of Economic Research (NBER):

“The effects of the current crisis on women versus men are likely to be sharply distinct from those of other economic downturns. In recent recessions such as the one in 2008, job losses for men were much higher than for women. One reason is that relatively more men work in industries heavily affected by a “standard” downturn (such as manufacturing and construction), while women’s employment is concentrated in less cyclical sectors such as health care and education” (Alon et al., 2020).

Additional demographic characteristics should also be examined when studying the effects of remote work on the labor force. We would expect the effects of remote work to exhibit large differences between groups based on marital status and number of dependent children.

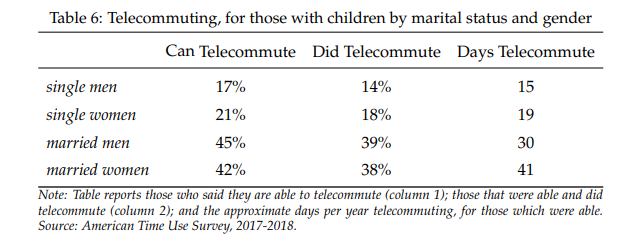


Figure   
Source: NBER Working Paper #26947 “The Impact of Covid-19 on Gender Equality”, April 2020

Many local governments in Florida are currently being impacted by the transition to remote work. They rely heavily on sales and property tax revenues to fund fiscal spending packages and their annual budgets. The uncertainty created by the Covid-19 pandemic along with the structural changes to the labor force associated with remote work has made forward-looking projections and estimates extremely difficult for local governments. According to the tax and accounting consulting firm Grant Thornton “As the consequences of long-term remote work continue to grow in prominence across the country, many states and localities continue to issue guidance regarding the income tax treatment of teleworking employees and business tax nexus policies” (Grant Thornton LLP, 2020).

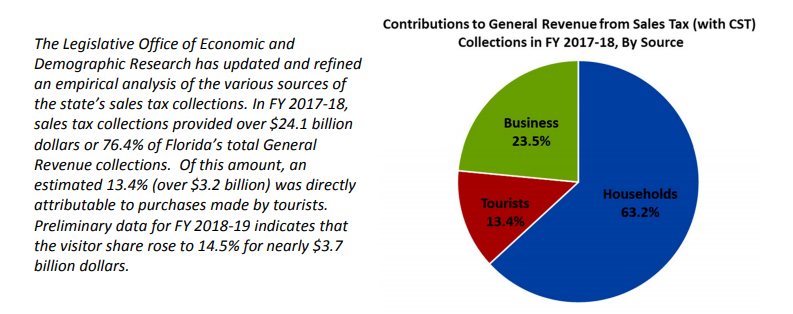


Figure   
Source: Florida Legislature Office of Economic and Demographic Research, 12/30/2020

Employers have also been faced with the challenges of potential additional business tax filing obligations as a result of employees telecommuting from jurisdictions in which the employer does not otherwise have a physical presence or other nexus. In response, approximately one-third of the states have issued guidance providing for the temporary suspension of corporation income tax and/or sales and use tax nexus thresholds where the pandemic has forced certain employees to work remotely in a state in which the company would otherwise not have nexus.

Many businesses are cautious about offering telework as an option precisely because it exposes them to taxation in states where they might otherwise have insufficient contacts—the technical term is “nexus”—to be taxable. The COVID-19 pandemic, however, suddenly made that the preferable choice for many businesses across the country.

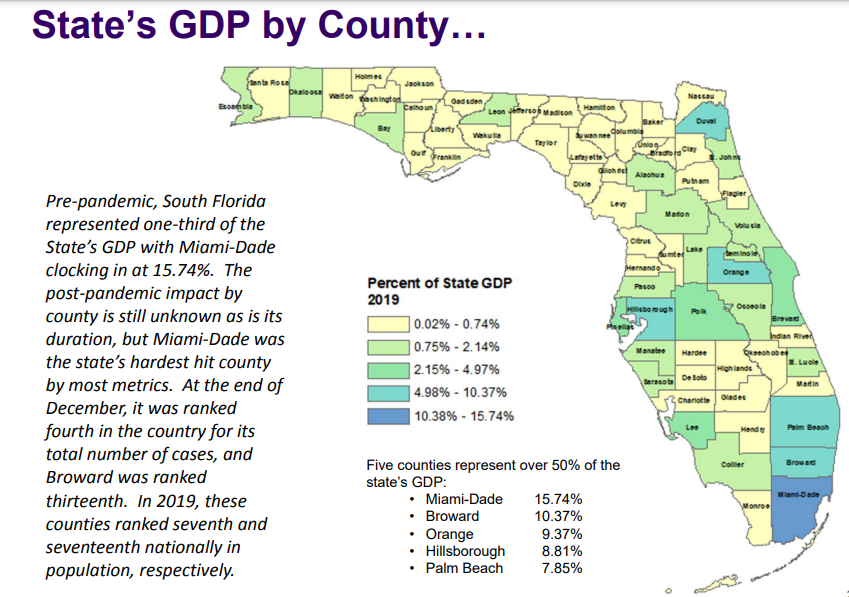
When businesses engage in economic activity in multiple states, it is necessary to determine which states have a right to tax them and how much of the business’s net income those states can claim. This is where nexus and apportionment come in, and both are affected by telework. Nexus tells us whether a business has sufficient presence in a state for that state to tax any of its activity. Apportionment determines the division of that income to yield the appropriate share for a given state to tax. Without some standards for nexus and apportionment, there would be nothing to prevent states from taxing businesses that have no connection to that state, or from taxing the entirety of a business’s income even though it is also taxed in other states on much or all of that income as well.

**Academic Literature Review**

Academic literature regarding the economic and fiscal effects of remote work on specific Florida industries the labor force, or local governments is currently lacking and as such may only provide anecdotal or survey responses related to our research proposal rather than detailed econometric analyses. The scarcity of research on this topic is likely attributed to the recent, sudden rise in the need for remote work caused by the COVID-19 pandemic which has not allowed enough time for academic researchers to properly analyze the effects of remote work or publish their results in peer-reviewed journals. Research regarding the impact of remote workers on the gross domestic product of different core industries within the state as well as any associated sectors would likely be the best areas to focus our research efforts. By studying changes in trends pre-pandemic and post-pandemic within these different industrial sectors, the effects of remote workers on each industry may be revealed.

According to researchers David Gao and Mark Robbins whose published work in the *Municipal Financial Journal* states, “Florida’s economic circumstances were strong going into the COVID-19 recession. The state had a strong and growing economy, with gross state product growing at an increasing rate in every year since 2010” (Gao & Robbins, 2020). Economic theory would suggest that all industries should experience negative economic effects during a recession or the government shutdown of businesses due to exogenous events like a global pandemic, but industries that are more suited towards allowing their employees to continue working remotely are predicted to have experienced smaller negative effects. It is widely known that Florida’s economy is heavily dependent on the tourism and healthcare industries. An analysis regarding industrial diversification within the state of Florida conducted by the Bureau of Economic Analysis states:

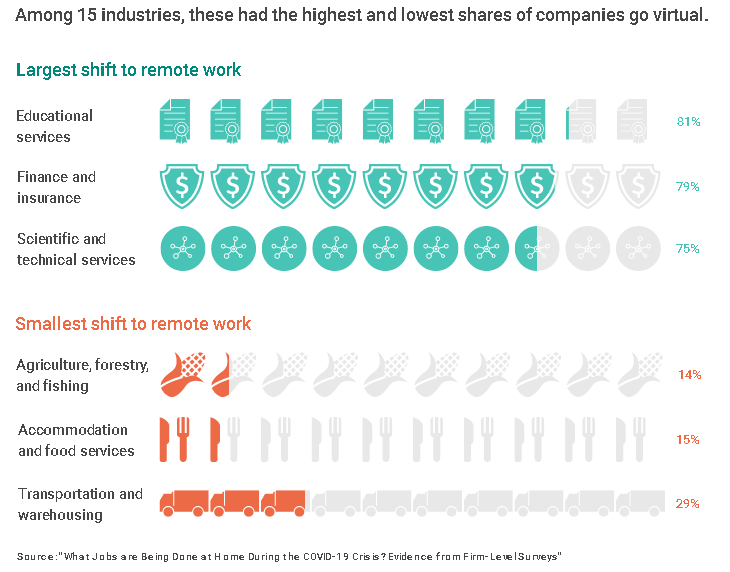
“Six industries make up more than half of the economy (by state gross domestic product). These are real estate (including rental and leasing); healthcare and social assistance; retail trade; professional, scientific, and technical services; wholesale trade; and finance and insurance” (Bureau of Economic Analysis, 2018).



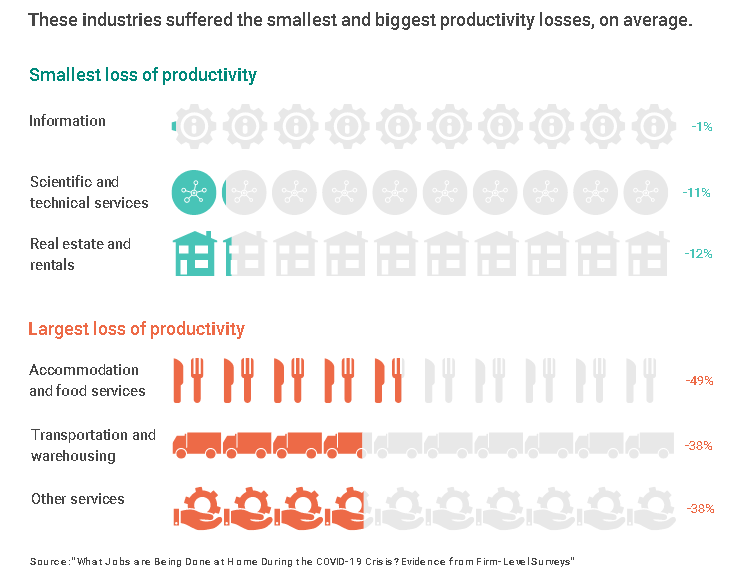
These core industries and their performance have dramatic effects on regional economies within the state of Florida and the associated businesses that develop around them. This economic theory is supported by research conducted by Aaron Klein and Ember Smith at the Brookings Institutewho state, “The performance of core industries spills over to supporting industries and affects the entire regional economy; restaurants and retail stores do better when the core industry is booming and struggle when it is not” (Klein & Smith, 2021). By focusing on the direct economic effects of remote work in targeted industries within the state, it will help estimate the indirect effects in other associated support industries. The Brookings Institute research report also stated, “Before COVID-19, Orlando had the largest tourism industry in the nation, producing $26 billion per year… roughly one in five workers in Orlando (21%) worked directly in hospitality and leisure in 2019” (Klein & Smith, 2021). The tourism and hospitality industries are unlikely to have many positions that allow employees the ability to work remotely and should be expected to have larger negative effects to GDP compared to more technical industries.

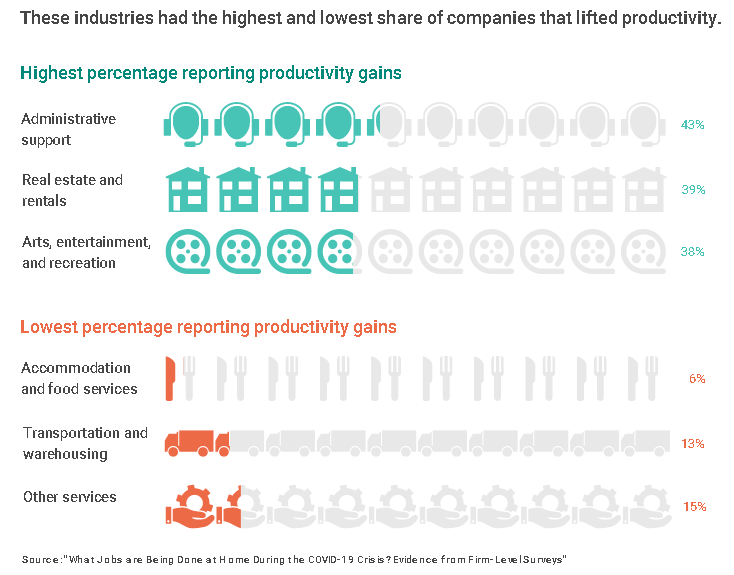
According to a recent working paper published by Harvard Business School, *What Jobs are Being Done at Home During the COVID-19 Crisis? Evidence from Firm Level Surveys*, the educational composition of an industry is statistically significant to the industry’s ability to transition to remote work. The researchers used a combination of firm survey data from multiple sources, including the National Association for Business Economics, and have found the following: “In the most educated quartile of industries, 64 percent of firms had some workers switch to remote work. In the least educated quartile of industries, only 36 percent of firms had any workers switch to remote work” (Bartik et al., 2020). The educational requirements for each industry correspond directly to the likelihood of remote work being implemented. They summarize this finding by stating, “In industries with more educated workers, the level of remote working is higher and the perceived productivity loss from remote working is lower. While knowledge-intensive work done by skilled professional and business service providers can often be provided electronically, work in capital intensive factories or in hospitality and leisure tends to be harder to perform via Zoom.” (Bartik et al., 2020). Educational attainment and classifications of work performed by industry should be a necessary component of to include in any economic analysis of remote work that will be conducted going forward.

Their research also produced support for our hypothesis that certain job characteristics in different industries also influences the ability for firms to transition to remote work. They also find that this factor is also correlated to productivity changes within each industry and state this explicitly by writing, “…suitability for remote work at the industry level is an important determinant of actual remote work. Industries that are better suited to remote work also seem to experience less productivity loss when switching to remote work” (Bartik et al., 2020). These findings support the assumption that measuring and estimating productivity changes by industry will help with any economic analysis or forecasting related to remote work implementation.



Moving forward, a recent published article in the Harvard Business Review titled, *Our Work-from-Anywhere Future*, examined the effects of the remote work phenomenon at both the individual and firm level. Some of the direct effects of remote work were found using case studies of different private businesses and government institutions. A cost-benefit analysis of remote work conducted on the US Patent & Trademark office yielded the following insights and results: “Fewer in-office employees mean smaller space requirements and reduced real estate costs. The USPTO estimated that increases in remote work in 2015 saved it $38.2 million” (Choudhury, 2020). This type of cost reduction is not isolated only to government institutions and private firms also reported substantial savings due to remote work. The author supports this by writing, “Leaders at GitLab, too, pointed to employee retention as a positive outcome of the company’s decision to be all-remote. The net benefit, they believe, including the productivity increases and property cost savings they’ve seen, equals $18,000 a year for each worker” (Choudhury, 2020). These results were found prior to the pandemic and suggest that there are significant economic and fiscal benefits to remote work. This is more support for the inclusion of productivity changes in any economic analysis and the need to examine any associated property costs at the industry level.





**Florida Industries**

This section will be for the economic and fiscal impact analysis of remote workers on the various industries in Florida.

**Labor Force**

This section will be for the economic and fiscal impact analysis of remote workers on the labor force in Florida.

**Local Governments**

This section will be for the economic and fiscal impact analysis of remote workers on the local governments in Florida.

“Florida does not have an income tax. State of Florida revenues include a host of sales taxes, a corporate income tax, documentary stamp taxes (real property trans-fer tax), lottery, and gross receipts taxes. Sales taxes are not recorded as remitted, as in some states, but at the very end of the month in which they are collected. Florida’s population growth (about an 11% increase from 2010 to 2020) has produced corollary consumption tax growth. The resulting positive tax elasticity has allowed for ample revenue growth without much adjustment to tax rates and structures” (Gao & Robbins, 2020).

**Attracting Remote Workers**

This section will be for the econometric analysis of attracting remote workers to specific counties in Florida.

**Recommendations & Conclusions**

This section is for our conclusions and restating our findings from the research above.

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APA style citations for all sources used in our research project:

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NBER Working Paper No. 27344

June 2020

JEL No. I15,J21,L23,M15,M5COVID-19 and Remote Work: An Early Look at US Data

**Appendix**

All of the mathematical formulas, full charts, etc. should be placed in the appendix.