The Impact Of Hybrid Work On Commuters And NYC Sales Tax

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Introduction

With more City businesses making plans or beginning to call back workers to the workplace, one of the key questions that has emerged is how work patterns have been altered by the pandemic and how this impacts New York City's economy and tax base. The answer to this depends on the extent to which workers will return to a typical five-day workweek on site at their workplace. For now, it seems that most businesses will employ a hybrid work model that involves a mix of work from home and work at the office. Based on recent surveys of City businesses[1], employees will spend on average three days at the office and two days at home. There is however considerable variance among industries in their willingness to adopt hybrid work models. Generally, tech firms have indicated that they are more accommodating to work from home while Wall Street leaders have expressed a stronger desire that their employees work most days at the office.

Changes in work patterns resulting from hybrid work could have significant and far-reaching impacts on many aspects of the City's economy. Demand for office space could be diminished and transit ridership could remain depressed as a result of workers being at home more often. Some workers may decide to shift residency outside the City as the burden of daily commuting is lowered. These long-term structural changes are difficult to gauge at this time. This analysis focuses on providing a framework to analyze how the typical daily spending of office workers will be impacted and the resulting change in City sales tax revenue.

As workers remain home, the normal day-to-day spending that occurs at the office (lunch, coffee, shopping, drinks after work, etc.) will occur elsewhere or be reduced. The impact on City sales tax revenues varies depending on where future spending occurs compared to present spending. This in turn depends on the numbers of workers who reside outside the City and commute into the City for work, City residents who commute to work outside the City, and City residents who also work in the City.

In the case of commuters to the City, some of their daily spending will no longer occur in the City, thereby reducing City sales tax revenue. Conversely, City residents who commuted to workplaces outside the City will now be spending more time and making more purchases in the City. City residents who work in the City would likely replace spending at the office with spending closer to home – perhaps substituting home-prepared food purchased at the grocery store (not subject to sales tax) for meals previously purchased at a restaurant and subject to the sales tax. Consumers

[1] US Remote Work Survey: PwC

may also choose to save money spent at the office or spend it differently -- instead of spending on lunch at the office they may decide to go out for dinner more often.

The exact nature of the changes in expenditure patterns is unknown at this time. *Our baseline assumption is that spending that would previously have occurred at the office will now take place at home, dollar-for-dollar -- although perhaps on a different mix of goods and services.*[2] Therefore, in the case of commuters into the City, spending and taxes will be lower, while simultaneously increasing revenues in the places in which they reside. In the case of commuters from the City, the City will be the beneficiary of new spending and resulting sales tax revenue. In the case of City residents who work in the City, the impact of hybrid work is assumed to be revenue neutral as spending at the office is simply replaced with spending close to home which is still City spending.

Commuting Patterns Into and From New York City

In order to analyze the impact of these changes, the numbers and types of commuters as well as the amount of daytime office spending and the number of days that they will be working from home need to be quantified. We begin with the question of the number of commuters into and from the City.

Commuters into the City

Based on the latest American Community Survey (ACS) data from the U.S. Census Bureau,[3] there are approximately 1.04 million commuters who reside outside the City but work in the City. As shown in the map below the majority of these workers reside in neighboring counties of New York State or the surrounding states of New Jersey, Connecticut and Massachusetts. There are some “commuters” from very distant states, like Florida and California for instance.[4] These are commuters who either already work remotely or make only sporadic trips to the City. An example of the latter would be an actor or performer who might come to the City for a brief period of time but live in California for the majority of the year.

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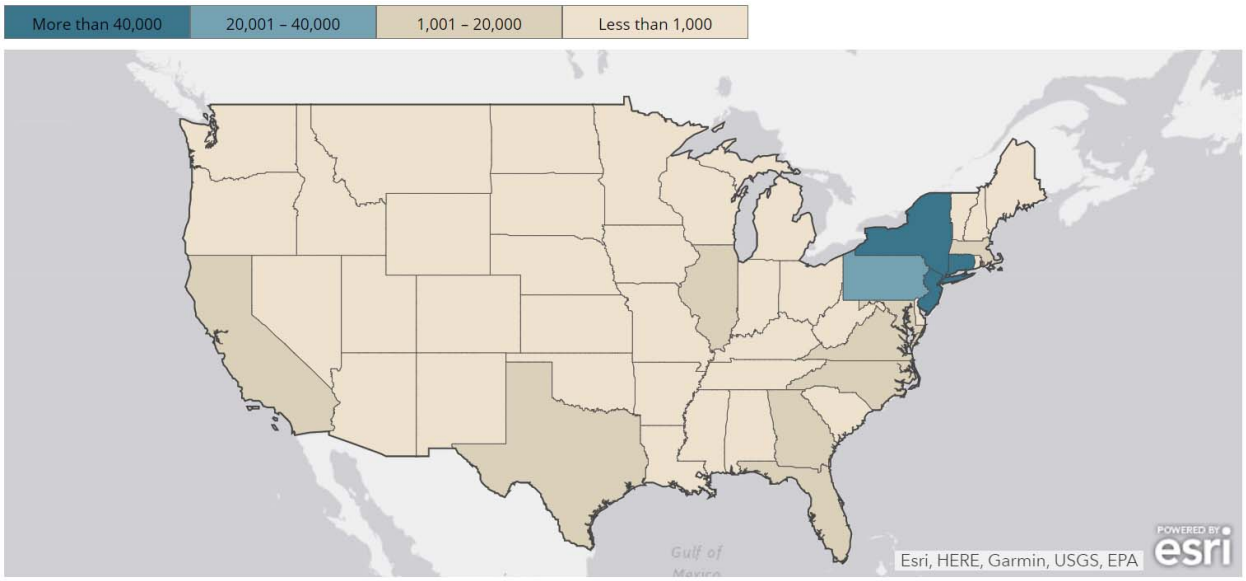
[2] There is limited survey data on the changes in spending patterns associated with remote work. One survey found that workers were actually spending more, $209 a month, at home than at the office. Lower spending on items such as clothing, dry cleaning, food away from home, commuting was more than offset by increases in spending on utilities and groceries. However, for some categories such as utilities, the increase in consumer expenditure is offset by lower spending by businesses as offices remain dark. Additionally, the survey was conducted in June 2020 when restaurant capacity was greatly constrained and since then dining away from home has rebounded. Overall, we think that this baseline assumption is a generally valid one.

[3] The 5-year 2014-2019 ACS was used in the analysis rather than the 1- year survey to provide for a larger sample size and more robust results.

[4] The ACS survey asks workers where they reside and where their primary place of work is. Following the convention of other studies, we use the word commuters to define workers who live in one place but work for an employer located elsewhere. In some instances these workers may be “commuting” to their workplace remotely as discussed in examples below. Furthermore, the survey asks respondents the primary means by which they commute to work. The survey does not provide further detail on the number of times they use such means nor if they use multiple means to commute to work.

Graph 1: Commuters into NYC by State:

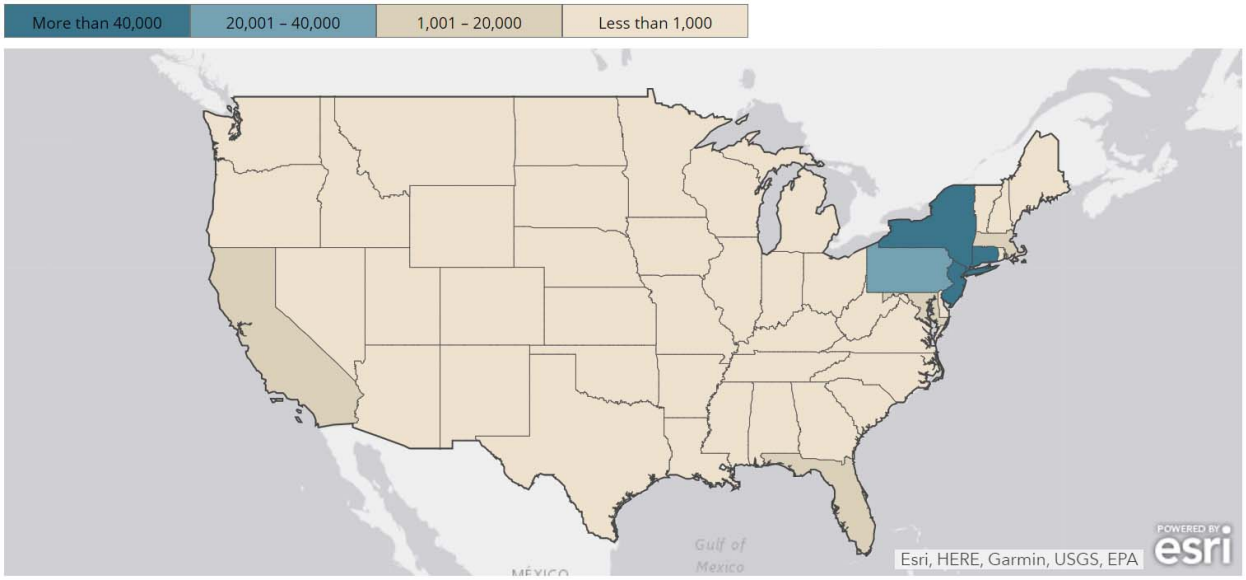


We assume that workers who reside along the DC to Boston "Amtrak Acela Corridor" will be primarily impacted by hybrid work. Commuting days into the City could be significantly reduced for these workers by increased remote work usage. These workers total 1.01 million, almost 98 percent of all commuters into the City (See Appendix for further detail.)

Commuters from the City

Based on the ACS an estimated 290,000 New York City residents work outside the City. As with commuters into the City, the places where City residents commute to for work are largely concentrated in the surrounding states or in nearby New York counties outside the City. There are some distant commuters to states like Florida and California as well. Following the same rationale of commuters into the City, we limit the analysis to City residents who commute along the "Amtrak Acela Corridor", or approximately 277,000 commuters. The commuting patterns of these workers are more likely to be impacted by changing work patterns and increased use of hybrid work.

Graph 2: Commuters from NYC by State:



City resident workers

The vast majority of people who work in the City also reside in the City, a total of 3.7 million workers. To reiterate, our baseline assumption is that City resident workers will replace spending at the office with spending closer to home. Therefore these workers will have no impact on City spending or sales tax revenue. While there may be some spending changes from taxable categories such as lunch at restaurants to tax exempt purchases such as groceries, at the same time spending shifts could also occur from tax exempt purchases, such as bus and subway rides, to purchases of taxable items such as home office goods.

In our baseline analysis, we also assume that the number of existing City residents remains unchanged. However, increased working from home could lead more current City residents to relocate outside the City as commuting times are reduced. Given their large numbers, 3.7 million, even a small percent change in the number of current residents relocating outside the City could result in a significant tax revenue loss as some current City resident-workers would become commuters and spend more of their income outside the City. We discuss the downside risk to this baseline in greater detail in the summary section.

Hybrid Work by Industry

In addition to the commuting patterns of workers, another important factor in the analysis is whether workers are employed in industries and occupations that are amenable to remote work. Data from the federal Bureau of Labor Statistics (BLS) is used to inform the estimate of the percent of workers in each industry who can work from home.[5] As evidenced by the BLS data, remote work is primarily concentrated in office-using industries, including information, finance, and business and professional services such as law and accounting firms. These are largely service sector professionals who rely on computers to do their work and do not interface directly with the public in their day-to-day work. In contrast, workers in industries such as manufacturing, construction, hospitality and retail who need to be on the premises are not likely to be able to avail themselves of remote work, with the exception of some administrative and managerial personnel in these industries.

The tables below show the industries in which commuters are employed and their ability to work from home based on the BLS data. In the case of commuters into the City, 53 percent of all employees could work remotely. For reverse commuters, a relatively lower 46 percent of all employees would be amenable to hybrid work.

While this provides an estimate of the potential workers who could work remotely an additional adjustment needs to be made to reflect the fact that some workers, even if given the option to work remotely, may choose not to. Based on a survey we estimate that 10 percent would choose to work at the office, even if given the option to work remotely.[6]

Table 1: Commuters into NYC, Employment by Industry

	Employment	Ability to Telework %	Total Potential Telework Employment
Agriculture	435	16%	70
Construction	79,453	22%	17,321
Manufacturing	36,372	37%	13,312
Retail, Wholesale, Transportation	136,685	28%	38,067
Information, Finance and Professional Services	407,076	74%	300,016
Education & Health	209,447	50%	104,095
Arts, Entertainment	51,994	21%	10,659
Other Services	30,301	56%	16,817
Public Admin	60,382	55%	33,150
TOTAL	**1,012,145**	**53%**	**533,505**
Adjustment for those not choosing to telework			**480,154**

Numbers may not add due to rounding

[5] "Ability to work from home: evidence from two surveys and implications for the labor market in the COVID-19 pandemic," US Bureau of Labor Statistics, *Monthly Labor Review* June 2020

[6] What employees are saying about the future of remote work | McKinsey

Table 2: Commuters from NYC, Employment by Industry

Industry	Employment	Ability to Telework %	Total Potential Telework Employment
Agriculture	233	16%	37
Construction	13,949	22%	3,041
Manufacturing	23,983	37%	8,778
Retail, Wholesale, Transportation	59,716	28%	16,631
Information, Finance and Professional Services	65,940	74%	48,598
Education & Health	64,868	50%	32,239
Arts, Entertainment	26,608	21%	5,455
Other Services	16,862	56%	9,358
Public Admin	5,070	55%	2,783
TOTAL	**277,229**	**46%**	**126,921**
Adjustment for those not choosing to telework			**114,228**

Numbers may not add due to rounding

Daytime Office Spending

Data from a 2012 national survey of office worker spending was used to inform the daytime spending of workers.[7] According to this data the typical worker with ample retail offerings like those available to a New York City worker spends on average $227 a week at the workplace. Adjusted for inflation this equates to $277 in 2021.

This figure includes all items, such as the daily spending for lunch, drinks after work, spending on transportation and parking, gym and salons, purchases at convenience stores as well as occasional higher ticket item purchases at clothing and other stores.[8] One important limitation of the data is that it is not specific to New York City. To better reflect the higher costs in New York we used a cost of living calculator (excluding housing) and adjusted this figure by 27 percent to account of the higher costs in New York City compared to the representative city in the U.S.[9] This results in a weekly spend of $353 for the average employee.

[7] International Council of Shopping Center, "Office Worker Spending in the Digital Age"

[8] Clothing items sold for less than $110 are exempt from sales tax.

[9] Cost of Living Calculator | Cost of Living in New York, New York | Salary.com

Spending and Tax Impact from Remote Work

The spending and sales tax impact are derived by multiplying the number of workers who can work remotely (Tables 1 and 2), by their average spend and the number of days they are expected to work remotely. The results are shown below.

For commuters into the City reduced days in the City could result in a loss of over $1.6 billion in taxable spending, or $73 million in lost sales tax revenue per day. For commuters from the City, more days spent at home in the City would result in increased spending of approximately $386 million, or a gain in sales tax revenue of $17 million.

On a net basis, assuming two days of remote work, we estimate that the City could potentially lose $111 million in sales tax revenue annually.

Table 3: Impact on Sales and Sales Tax Revenue

Commuters Into City	
Total Commuters who work remotely	480,154
Weekly Spend	$353
Total Annual Spend (assuming 48 work weeks)	$8,124,922,694
Annual Spending Reduction per day not at office	$1,624,984,539
Tax Revenue Loss per day not at office*	$73,124,304
Total days not at office	2
Tax Revenue Loss	$146,248,608

Commuters from the City	
Total Commuters who work remotely	114,228
Weekly Spend	$353
Total Annual Spend (assuming 48 work weeks)	$1,932,908,337
Annual Spending Increase per day not at office	$386,581,667
Tax Revenue Gain per day not at office	$17,396,175
Total days not at office	2
Tax Revenue Gain	$34,792,350

*Based on a tax rate of 4.5%

Summary

By itself this is a relatively modest revenue loss – less than 1.5 percent on the City's projected $7.4 billion in sales tax revenues in Fiscal Year 2022. This result is driven by several factors and behavioral assumptions.

The first is that the 3.7 million City residents who live and work in the City are by far the largest group of workers and some of the largest categories of spending that comprise the City's sales tax base are driven almost exclusively by residents. As shown in the Appendix, among the top 15 sales categories are items such as utilities (electric power), automobiles, and groceries that are purchased almost exclusively by residents rather than commuters.[10]

As noted previously, if increased remote work usage were to cause City residents to relocate outside the City, the resulting loss in tax revenue could increase significantly as the City's resident tax base shrinks. It should also be noted that that those most likely to change residency would be precisely those workers employed in industries such as finance and business services, where incomes and spending are likely to be higher.

Similarly, even if workers did not change residency but spent increased amounts of time in second homes outside the City, the resulting loss would be higher than the baseline figure shown in table 3. This scenario would be of particular concern if the two stay-at-home days were staggered around the weekend, e.g. Friday and Monday, as opposed to Tuesday and Thursday.

The fact that remote work is not a particularly viable option for many workers such as those employed in manufacturing or retail also contributes to the relatively small loss. As employment in the City's economy increasingly declines in these industries, replaced by service sector jobs including those associated with high tech, the potentially negative impact on sales tax revenue could increase.

In concluding it is important to note that even though the overall impact of hybrid work may be relatively small and offset from shifting local consumption patterns, these losses will have significant impacts on the many businesses who rely on office workers for their sales.

Acknowledgments

The Office of the Comptroller thanks Norton Francis, District of Columbia Office of Revenue Analysis, for comments on an earlier draft.

[10] Other top categories such as accommodation and restaurants rely heavily on tourists. The impact of the pandemic on tourism is an important consideration as well for the analysis of sales tax revenue. Unlike work from home, the tourism impact is more likely to be cyclical and have a short to medium term impact.

Appendix

Table A.1: Top 15 NYC Taxable Sales Categories

Category	Taxable Sales and Purchases	Percent of total
Restaurants and Other Eating Places	$22,824,993,405	12.5%
Electric Power Generation, Transmission and Distribution	$9,885,111,607	5.4%
Traveler Accommodation	$9,484,062,304	5.2%
Electronic Shopping and Mail-Order Houses	$6,464,549,299	3.5%
Automobile Dealers	$5,981,969,143	3.3%
Clothing Stores	$5,830,325,350	3.2%
Other Transit and Ground Passenger Transportation	$4,163,938,168	2.3%
Other Professional, Scientific, and Technical Services	$3,894,665,185	2.1%
Other Miscellaneous Store Retailers	$3,842,215,627	2.1%
Building Material and Supplies Dealers	$3,641,869,282	2.0%
Computer Systems Design and Related Services	$3,584,241,307	2.0%
Other Information Services	$3,463,553,102	1.9%
Wired and Wireless Telecommunications Carriers	$3,231,667,578	1.8%
Grocery Stores	$3,185,278,559	1.7%
Health and Personal Care Stores	$3,140,633,039	1.7%

Source: NYS Dept. of Taxation and Finance. Data is for the FY 2019 that preceded the Covid-19 pandemic

Table A.2: Commuters to and from NYC

	Commuters to NYC	% total	Commuters From NYC	% total
Alabama	66	0.0%	97	0.0%
Alaska	-	0.0%	53	0.0%
Arizona	566	0.1%	63	0.0%
Arkansas	122	0.0%	12	0.0%
California	3,619	0.3%	1,882	0.7%
Colorado	706	0.1%	62	0.0%
Connecticut	45,884	4.4%	11,110	3.9%
Delaware	833	0.1%	325	0.1%
District of Columbia	491	0.0%	596	0.2%
Florida	6,435	0.6%	1,615	0.6%
Georgia	2,084	0.2%	845	0.3%
Hawaii	115	0.0%	45	0.0%
Idaho	33	0.0%	32	0.0%
Illinois	1,135	0.1%	940	0.3%
Indiana	293	0.0%	212	0.1%
Iowa	-	0.0%	-	0.0%
Kansas	-	0.0%	-	0.0%
Kentucky	224	0.0%	160	0.1%
Louisiana	201	0.0%	205	0.1%
Maine	330	0.0%	126	0.0%

	Commuters to NYC	% total	Commuters From NYC	% total
Maryland	1,926	0.2%	1,478	0.5%
Massachusetts	3,042	0.3%	1,908	0.7%
Michigan	946	0.1%	269	0.1%
Minnesota	217	0.0%	194	0.1%
Mississippi	127	0.0%	28	0.0%
Missouri	406	0.0%	72	0.0%
Montana	56	0.0%	72	0.0%
Nebraska	38	0.0%	76	0.0%
Nevada	202	0.0%	40	0.0%
New Hampshire	584	0.1%	253	0.1%
New Jersey	426,259	41.1%	75,746	26.3%
New Mexico	98	0.0%	2	0.0%
New York	511,540	49.3%	183,148	63.6%
North Carolina	1,369	0.1%	754	0.3%
North Dakota	11	0.0%	-	0.0%
Ohio	734	0.1%	358	0.1%
Oklahoma	103	0.0%	10	0.0%
Oregon	66	0.0%	9	0.0%
Pennsylvania	21,403	2.1%	2,663	0.9%
Rhode Island	767	0.1%	255	0.1%
South Carolina	659	0.1%	261	0.1%
South Dakota	-	0.0%	15	0.0%
Tennessee	381	0.0%	24	0.0%
Texas	1,228	0.1%	717	0.2%
Utah	152	0.0%	19	0.0%
Vermont	268	0.0%	257	0.1%
Virginia	1,646	0.2%	567	0.2%
Washington	301	0.0%	193	0.1%
West Virginia	35	0.0%	-	0.0%
Wisconsin	154	0.0%	198	0.1%
Wyoming	-	0.0%	-	0.0%
Total	1,037,855	100.0%	287,966	100.0%
Subtotal Amtrak Corridor	1,012,145	97.5%	277,229	96.3%

Source: 2019 ACS