Estimates of the Impact of COVID-19 on the City of Philadelphia's Tax Revenues

April 27, 2020

The COVID-19 pandemic is having an unprecedented impact on the Philadelphia region. Following the announcement of Philadelphia's first confirmed case on March 10, schools were closed on March 16 and a stay-at-home order began on March 23. The order imposed a number of public health restrictions on the city's residents designed to slow the spread of infections and prevent the crisis from overwhelming the city's healthcare capacity. These restrictions have had an immediate and profound effect on the local economy, with non-essential businesses forced to close temporarily and sudden and enormous job losses. While not yet reflected in official statistics, the reality of the impact so far indicates the city is in a recession. As the economy contracts, the City's tax revenues will decline, particularly those most sensitive to economic conditions, such as wage and sales taxes.

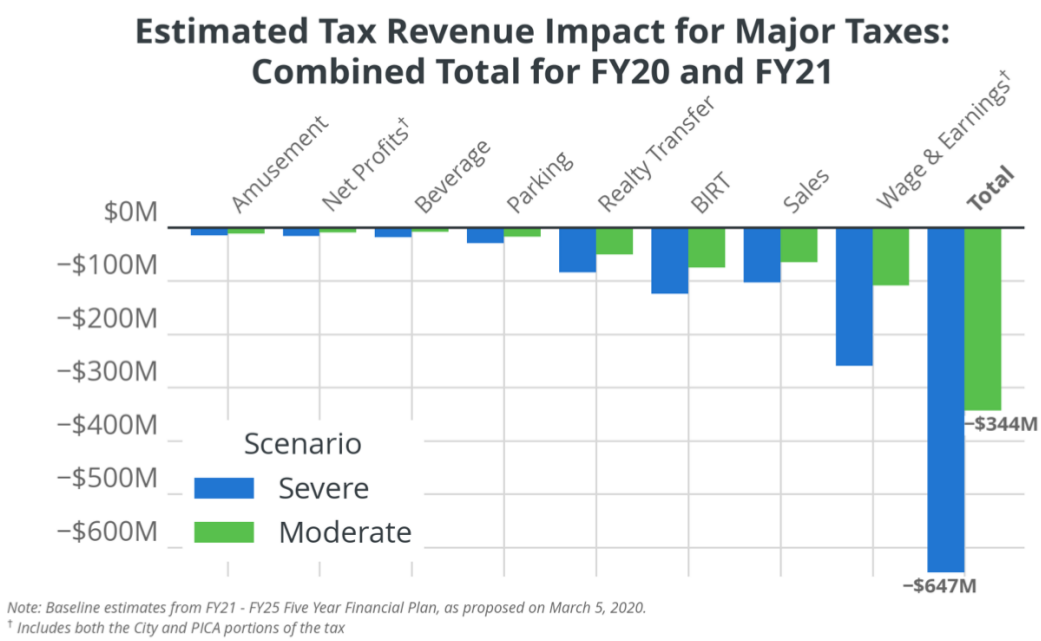
This report provides an estimate of the potential impact of the COVID-19 crisis on the City's revenues over the next year. Like other cities across the country, a great deal of uncertainty surrounds Philadelphia's future from both a public health and economic perspective. The ultimate economic toll of the COVID-19 pandemic will depend on a range of items, including the success of public health efforts, the federal government's policy response, and the ability to safely re-open the city's economy. Given this uncertainty, the Controller's Office analyzed two possible scenarios, moderate and severe, and their associated tax revenue impacts. The impact is presented relative to projections in the City's FY21-FY25 Five Year Financial Plan, as proposed on March 5. The projections examine the short-term impact to the City's finances, focusing on fiscal year 2020 (FY20), which ends on June 30, 2020, and fiscal year 2021 (FY21).

Relative to the March baseline, the Controller's Office estimates a combined tax revenue shortfall in fiscal years 2020 and 2021 ranging from $344M (-4.0 percent) in the moderate scenario to $647M (-7.5 percent) in the severe scenario. The differences relative to the March baseline are summarized by major tax in the table below. This report focuses only on the City's major taxes and does not include costs associated with the City's response to the emergency, the effects of state or federal aid, or the impacts to the City's non-tax revenue sources. The two scenarios considered, which are described in more detail in the following section, are designed to estimate the effects of the City's current stay-at-home order on the local economy. In both scenarios, the economic effects persist throughout calendar year 2021 as unemployment and local businesses slowly recover to pre-crisis levels. Moving forward, the Controller's Office will continue to closely monitor policy responses and public health forecasts, particularly the possibility of a second wave of infections, and will update the projections in this analysis in the coming months.

Estimated Tax Revenue Impacts for Major City of Philadelphia Taxes by Fiscal Year
Dollars in thousands

	Differences Relative to March Baseline					
	Moderate			Severe		
Tax	**2020**	**2021**	**Total**	**2020**	**2021**	**Total**
Wage & Earnings†	$ (57,104)	$ (51,524)	$ (108,627)	$ (120,968)	$ (138,414)	$ (259,382)
Sales	$ (26,485)	$ (38,316)	$ (64,801)	$ (38,190)	$ (64,379)	$ (102,569)
Business Income and Receipts††	$ (374,626)	$ 299,734	$ (74,892)	$ (376,199)	$ 252,333	$ (123,865)
Realty Transfer	$ (24,414)	$ (25,619)	$ (50,033)	$ (24,414)	$ (59,772)	$ (84,186)
Beverage	$ (3,941)	$ (3,608)	$ (7,549)	$ (7,882)	$ (10,124)	$ (18,006)
Amusement	$ (4,474)	$ (6,778)	$ (11,252)	$ (5,752)	$ (9,133)	$ (14,885)
Net Profits†,††	$ (46,278)	$ 36,801	$ (9,477)	$ (46,552)	$ 30,825	$ (15,727)
Parking	$ (8,012)	$ (9,066)	$ (17,078)	$ (13,353)	$ (15,430)	$ (28,782)
Total Difference	**$ (545,333)**	**$ 201,625**	**$ (343,709)**	**$ (633,309)**	**$ (14,093)**	**$ (647,402)**
Baseline	**$ 4,243,756**	**$ 4,411,761**	**$ 8,655,517**	**$ 4,243,756**	**$ 4,411,761**	**$ 8,655,517**
Percent Change from Baseline	**-12.9%**	**4.6%**	**-4.0%**	**-14.9%**	**-0.3%**	**-7.5%**

† Includes both the City and PICA portions of the tax
†† Large shifts in revenue from FY20 to FY21 due to changes to the filing date for BIRT and NPT from April 2020 to July 2020
Note: Baseline estimates from FY21 - FY25 Five Year Financial Plan, as proposed on March 5, 2020.



Methodology and Assumptions

This analysis considers the impacts of COVID-19 on the City's revenues under a moderate scenario and a more severe, extended recession scenario.[1] The assumptions for these scenarios were informed by recent forecasts made by economists, financial experts, and public sector

[1] All software used in this analysis is available at https://github.com/PhiladelphiaController/COVID19-forecaster.

institutions.[2] Although real-time indicators of the economic impact of the pandemic are limited, available data sources were used when possible. Forecasts have changed week to week, with the majority of recent forecasts predicting a global recession with a recovery that could last through 2021.[3] Both the moderate and severe scenarios in this analysis assume that the economic impacts of COVID-19 will last through FY21, but to different degrees of severity. The scenarios considered are:

- **Moderate Impact:** A more limited scenario resulting from a relatively short-term recession in which the economy experiences a brief, six-month shock and recovers close to pre-crisis levels by the first quarter of calendar year 2021. While uncertain, this scenario would be more likely if the city's stay-at-home order is relatively short, lasting between 8 and 10 weeks.
- **Severe Impact:** An extended scenario in which the economy experiences a more significant six-month shock, followed by a slower period of recovery that extends through the end of calendar year 2021 for the hardest hit industries. This scenario would be more likely if public health efforts require the city's current stay-at-home order to last into June or beyond, or if subsequent infection outbreaks require future shutdowns.

For both scenarios, the Controller's Office estimated specific, industry-level contractions for each tax using existing historical data as well as economic trends that have emerged since the start of the COVID-19 social distancing measures. As some industries are more heavily affected by mandated social distancing policies than others, the impacts of COVID-19 were applied industry-by-industry under both scenarios. Across Pennsylvania, job losses have already impacted some industries more than others. Since the second week of March, the Commonwealth has received more than 1.5 million unemployment claims.[4] Industries that could not shift workers to telecommuting, such as restaurants, construction, social services, retail, and manufacturing, had the highest rates of job loss in March.[5] The two scenarios assume that these industries will be harder hit by the economic impacts of COVID-19, while industries with more work-from-home capabilities will be more immune to the effects of a recession. Real-time data for hourly employees published by Homebase,[6] a scheduling and time-card company for local businesses, also indicates that these sectors have been adversely affected by the pandemic so far. A combination of unemployment claims, Homebase data, and a number of other publicly available sources,[7] were used to estimate contractions on a sector-by-sector basis.

---

[2] See analyses by New York City's Independent Budget Office, the San Francisco Controller, the Los Angeles Controller, Pennsylvania's Independent Fiscal Office, the Congressional Budget Office, McKinsey, and Deloitte.

[3] "Global Recession Already Here, Say Top Economists." *Financial Times,* March 15, 2020; "Why the Global Recession Could Last a Long Time", *New York Times,* April 1, 2020.

[4] https://www.uc.pa.gov/COVID-19/Pages/UC-Claim-Statistics.aspx

[5] Bureau of Labor Statistics, U.S. Department of Labor, *State Employment and Unemployment for March 2020*, https://www.bls.gov/news.release/laus.toc.htm (visited April 17, 2020).

[6] https://joinhomebase.com/data/COVID-19/

[7] See, for example, analysis from the Brookings Institution and survey data from the National Restaurant Association.

The quarterly contractions assumed for each tax are shown in the figure below. The City's business taxes, BIRT and the net profits tax, are omitted from the figure due to changes in their filing dates leading to large monthly changes from the baseline scenario. These taxes, as well as the other major taxes, are discussed in detail in the following section.

Assumed Tax Revenue Contractions Relative to March Baseline for Fiscal Years 2020 and 2021

	Moderate Scenario					Severe Scenario				
Wage	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
Arts, Entertainment, and Other Recreation	23%	13%	8%	5%	3%	50%	33%	24%	18%	13%
Banking & Credit Unions	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Construction	9%	3%	1%	1%	0%	20%	8%	4%	2%	1%
Education	9%	3%	1%	1%	0%	20%	8%	4%	2%	1%
Government	3%	1%	0%	0%	0%	5%	2%	1%	1%	0%
Health and Social Services	9%	3%	1%	1%	0%	20%	8%	4%	2%	1%
Hotels	23%	13%	8%	5%	3%	50%	33%	24%	18%	13%
Insurance	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Manufacturing	13%	5%	2%	1%	0%	30%	13%	6%	3%	2%
Other Sectors	13%	5%	2%	1%	0%	30%	13%	6%	3%	2%
Professional Services	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Public Utilities	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Publishing, Broadcasting, and Other Information	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Real Estate, Rental and Leasing	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Restaurants	64%	37%	23%	14%	9%	90%	59%	44%	32%	23%
Retail Trade	23%	13%	8%	5%	3%	50%	33%	24%	18%	13%
Securities / Financial Investments	9%	3%	1%	1%	0%	20%	8%	4%	2%	1%
Sport Teams	23%	13%	8%	5%	3%	50%	33%	24%	18%	13%
Telecommunication	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Transportation and Warehousing	13%	5%	2%	1%	0%	30%	13%	6%	3%	2%
Unclassified Accounts	4%	2%	1%	0%	0%	10%	4%	2%	1%	1%
Wholesale Trade	23%	13%	8%	5%	3%	50%	33%	24%	18%	13%
Total	11%	5%	2%	1%	1%	22%	11%	7%	4%	3%

Sales	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
All Other Sectors	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Car and truck rental	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Construction	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Hotels	50%	30%	20%	10%	5%	70%	50%	30%	20%	10%
Manufacturing	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Public Utilities	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Rentals except car and truck rentals	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Repair services	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Restaurants, bars, concessionaires and caterers	50%	30%	20%	10%	5%	70%	50%	30%	20%	10%
Services other than repair services	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Telecommunications	30%	20%	10%	5%	3%	50%	30%	20%	10%	5%
Total Retail	50%	30%	20%	10%	5%	70%	50%	30%	20%	10%
Wholesale	50%	30%	20%	10%	5%	70%	50%	30%	20%	10%
Total	45%	27%	18%	9%	4%	65%	44%	28%	18%	9%

	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
Realty Transfer	30%	10%	10%	5%	5%	30%	25%	25%	10%	10%
Beverage	20%	10%	5%	3%	1%	40%	30%	15%	5%	3%
Parking	30%	15%	10%	5%	5%	50%	30%	15%	10%	5%
Amusement	70%	40%	25%	15%	15%	90%	60%	30%	20%	15%

Tax Revenue Impacts

The economic impact of COVID-19 will affect the city's taxes differently. For example, wage, BIRT, and sales taxes are assumed to be more severely impacted than the real estate tax due to suppressed business activity and an increase in unemployment in the Philadelphia region. In addition to economic effects, the City moved its BIRT and net profits tax filing dates from April to July to match federal changes, shifting hundreds of millions in tax revenue from FY20 to FY21. The following sections summarize the projections for each of the City's major taxes.

Wage & Earnings Tax

The City's wage tax is its single largest tax revenue source[8] and is particularly sensitive to unemployment in the city. With job losses reaching historic levels, a large contraction in the City's wage tax is expected in the short term. The largest contractions are expected in the restaurants, leisure and hospitality, and retail sectors. In fiscal year 2019, these sectors accounted for about 12 percent of the City's total wage tax collections. The City's health and social services sector accounted for the largest fraction (21 percent), which should help mitigate the revenue losses to some degree. Job losses in this sector are expected to be less severe, although the industry has already seen impacts from the cancellation of non-essential and elective services during the stay-at-home order.[9]

Importantly, the analysis presented here does not account for wage tax refunds for non-resident employees who were forced to work from home during the stay-at-home order. With non-residents representing about 40 percent of the wage tax base, the City could see additional declines in its wage tax collections in FY21, as large as $30M for a stay-at-home order that lasts through June 2020.[10] However, the impact remains highly uncertain at this time and should be treated as an illustration of potential scale, rather than an exact forecast.

Sales Tax

With the majority of the city's businesses closed, the retail and restaurant industries are experiencing immediate and substantial losses. These two industries account for the largest portions of the City's sales tax revenue, with retail accounting for 32 percent and restaurants accounting for 15 percent in FY18. As such, the analysis assumes a drop in sales tax collections for these sectors of 50 percent in the moderate scenario and 70 percent in the severe scenario during the fourth quarter of FY20. Collections are assumed to decline by 30 percent (moderate) and 50 percent (severe) for other sectors. Sales tax revenue improves quarter by quarter, with the recovery delayed by a quarter in the severe case relative to the moderate scenario.

[8] Note that this analysis projects both the City and PICA portion of the wage and earnings taxes.
[9] https://www.inquirer.com/business/health/COVID-coronavirus-einstein-hospitals-cares-casey-pennsylvania-jefferson-philadelphia-20200415.html
[10] Assuming the entirety of non-resident workers in the Insurance, Professional Services, Publishing/Broadcasting, Securities/Financial Investments, and Telecommunication industries are able to work from home.

Business Taxes

Business tax collections for tax year 2019, typically due in April 2020, are not expected to be widely affected by the current crisis, with larger economic effects appearing in FY21 (April 2021). The City shifted its filing dates for BIRT and the net profits tax from April 2020 in FY20 to July 2020 in FY21. As the amount of businesses who will pay these taxes early remains uncertain, the projections assume the entirety of the revenue from April will be shifted to July in order to gauge the maximum effect on the City's short-term cash flow. For BIRT, this amounts to about $380M moving from FY20 to FY21.

To estimate the economic effects on BIRT and net profits collections, the analysis assumes a 5 percent (moderate) and 10 percent (severe) decline from baseline for July 2020 collections and a larger 10 percent (moderate) and 15 percent (severe) decline for the April 2021. These reductions are consistent with the magnitude of revenue declines in the years following the Great Recession.

However, it is worth noting that BIRT collections are particularly challenging to forecast due to a number of policy and accounting complexities. For example, while businesses are typically required to pre-pay their tax liability for the current tax year based on the previous year's liability, the regulations allow companies to pre-pay a lower amount if there is reason to believe the current year's tax liability will be lower.[11] To the extent that more businesses use this option than expected, additional revenue could shift from July 2020 to April 2021.

Beverage Tax

Similar to the sales tax, the COVID-19 crisis is expected to negatively impact beverage tax collections due to effects on the restaurant and dining industry. The analysis projects a 20 percent (moderate) and 40 percent (severe) decline from baseline in FY20 Q4, with the recovery delayed by a quarter in the severe case. With restaurants expected to be one of the last sectors to fully re-open, these effects are projected to last through the end of FY21.

Parking Tax

Vehicle traffic has declined sharply during the stay-at-home order,[12] leading to lower estimates for parking tax collections. Collections are projected to decline by 30 percent (moderate) and 50 percent (severe) from the baseline projections in FY20 Q4. With social distancing measures likely to continue into 2021 and the City's tourism industry adversely affected by the pandemic, declines are projected to continue through the end of FY21.

---

[11] See Section 202 E of the BIRT regulations.

[12] See recent traffic data for Philadelphia from TomTom: https://www.tomtom.com/en_gb/traffic-index/philadelphia-traffic/

Amusement Tax

The COVID-19 pandemic is expected to have a large effect on the City's amusement tax, which is imposed on admission fees to events like concerts, movies, athletic events, and night clubs. The City's current social distancing measures prohibit such events, and even if those measures are relaxed, the projections assume residents will largely shy away from large gatherings for some time. Collections are projected to decline by 70 percent (moderate) and 90 percent (severe) from the baseline projections in FY20 Q4, with large reductions continuing through FY21.

Realty Transfer Tax

With the City's housing market remaining active in recent years, revenue from the tax on residential and commercial real estate transfers has been historically high. In fact, March's collections total of $47M was a record high. Unlike the Great Recession, the current crisis is not housing-driven, making the effects of the pandemic on transfer tax revenue particularly uncertain. In both scenarios considered, the projections assume a 30 percent drop in collections in FY20 Q4, driven by the stay-at-home order and declines of 5 (moderate) to 10 percent (severe) from baseline projections continuing into 2021 due to ongoing social distancing measures. These declines are consistent with early indicators of the impact of the stay-at-home order on Philadelphia's housing market.[13]

Real Estate Tax

The analysis assumes no impact on the City's real estate tax collections in FY20 or FY21. Real estate tax collections are based on assessments that are released about a year prior to the filing date. As such, the economic impact on the tax will be delayed. As the current crisis begins to affect the City's housing market, the City's property tax collections would be first impacted in FY22, which are based on assessments released in April 2021.

Conclusion

The revenue shortfalls projected in this analysis, a combined total of $344M in the moderate scenario and $647M in the severe scenario for FY20 and FY21, represent an unprecedented fiscal challenge for the City. While the exact economic impact remains unknown, it is clear that the current emergency will have an enormous impact on the City's finances at a time when a historic number of residents are unemployed and the need for City services has never been greater. As the City faces these challenges, it is more important than ever that the City operates efficiently and effectively and is truly able to do more with less. As the City perseveres through the current crisis, the Controller's Office remains committed to these goals and ensuring that the City and its residents make it through this crisis stronger than ever.

---

[13] See, for example, data for March 2020 [from Redfin](#).