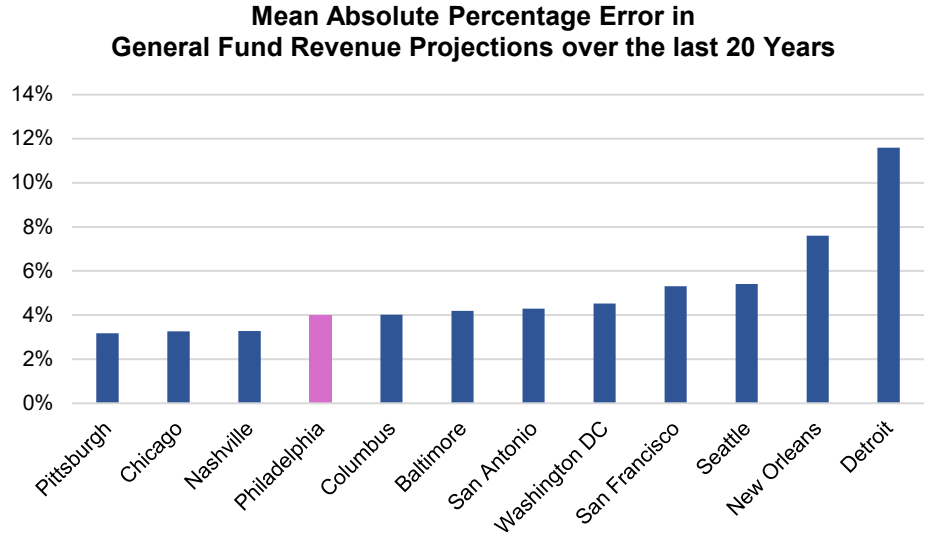
June 26, 2024

Hitting the Bullseye: Revenue Prediction Precision in Philadelphia and Peer Cities

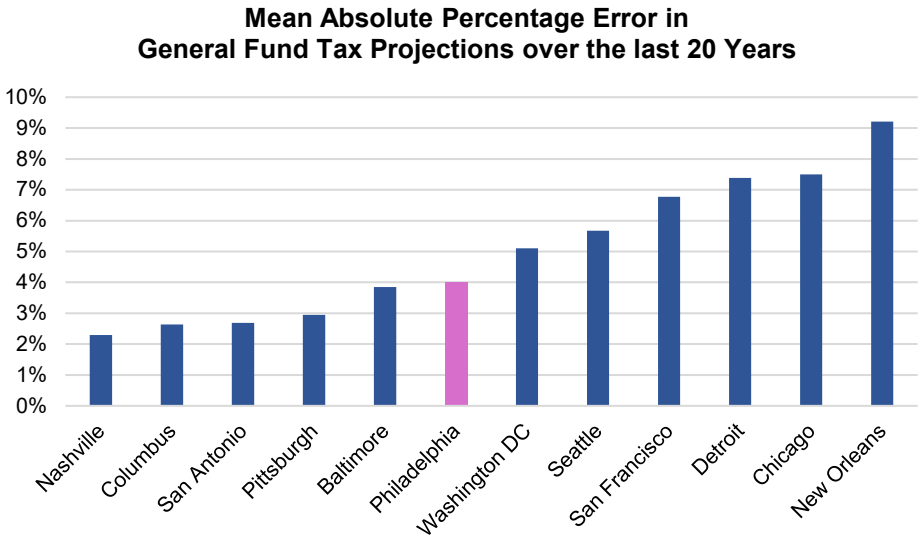
The ability of a city to accurately project its revenue collections is crucial for effective budgeting and financial planning. This is especially important for the City of Philadelphia, as the Intergovernmental Cooperation Agreement between the City and PICA requires that the City update its Five-Year Plan if there is a net adverse change in the fund balance of more than 5 percent of revenues, which can be driven by lower revenues, higher expenses or a combination of both. PICA staff reviewed 20 years of projections and actual results for revenue collections for Philadelphia and 11 peer cities.

It turns out that Philadelphia is pretty precise when it comes to making revenue predictions, on average within +/- 4.0 percent of actual results, while the average among the 11 peer cities was +/- 5.2 percent. This means that Philadelphia was closer than average to hitting the revenue estimates on the nose.



PICA Pennsylvania Intergovernmental Cooperation Authority

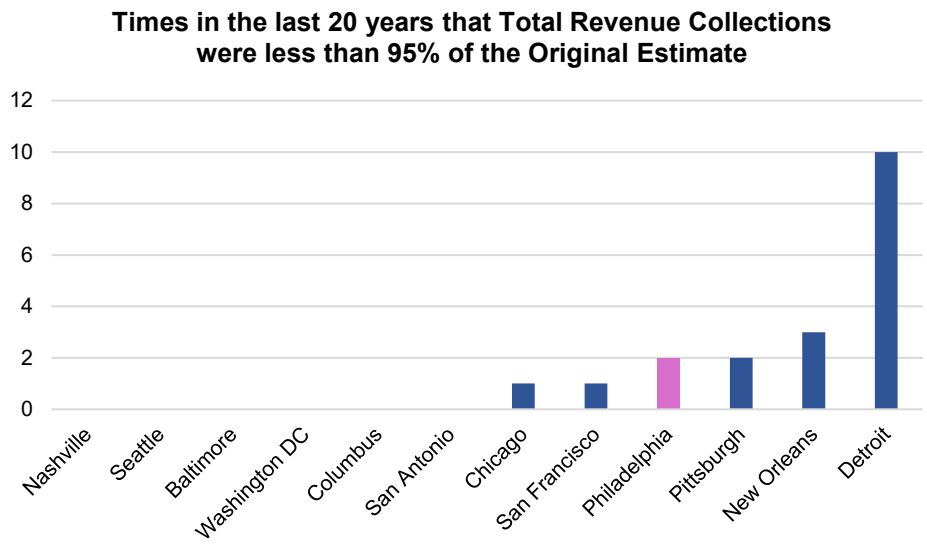
Focusing only on General Fund tax projections, Philadelphia continues to be more accurate generally than the average among the 11 peer cities. As with overall General Fund revenues, Philadelphia's tax estimates were +/- 4.0 percent of actual collections. This was better than the average among the 11 peer cities, which was +/- 5.1 percent.



Where the Rubber Hits the Road – Underestimates

These measures consider the absolute percentage difference (positive or negative) between the original projections and actual collections. Large variations, regardless of direction, can be problematic. Recurring, large underestimates mean that communities may miss opportunities for timely investments in needed programs or delay adjustments to tax burdens. Even more concerning are significant underestimates of revenues (which can be particularly difficult if revenues are collected later in the fiscal year after and/or if reserves are low).

In the past twenty years, Philadelphia has twice underestimated revenue collections by more than 5 percent, a level that would trigger the requirement to submit a revised Plan. In FY09, the first full fiscal year of the Great Recession, Philadelphia collected 94 percent of the $3.9 billion it had expected. The following two years were also below expectations, but not by more than 5 percent. In FY15, Philadelphia General Fund revenues were just 85 percent of the original estimate. The original estimate included $700 million in proceeds from the sale of the Philadelphia Gas Works but the transaction never happened. There were five other years between FY04 and FY23 that Philadelphia underestimated revenues by less than 5 percent.



Six of the 11 peer cities never underestimated revenues by 5 percent or more in the past twenty years, but all cities underestimated by some amount at least twice, mainly in years impacted by the Great Recession. Detroit underestimated its revenues in 14 of 20 years, ten of those by more than 5 percent.

Revenue Projection Accuracy & PICA Five Year Plan Analysis

Without a Back to the Future-style method of getting one's hands on future Annual Comprehensive Financial Reports (ACFRs) and bringing them back to the present, it is virtually impossible to project Philadelphia's General Fund revenues with 100 percent accuracy. But even though 100 percent accuracy cannot be achieved, making these projections is essential to sound financial planning; even more so when a community has low reserves to cushion against underestimates.

PICA's evaluation of the Five-Year Plan each year includes an analysis of the reasonableness of the City's assumptions and expectations about revenue collections. Each year, PICA considers the combination of methods the City has used to forecast revenues. While the criteria in the PICA Act require the City's forecasting methods to be reasonable without considering actual performance, in practice it is preferable that actual revenue collections routinely meet or exceed projections. Doing so every year is too high a bar – it wouldn't have been reasonable to predict calamities like COVID-19 or the Great Recession every year. Revenue assumptions that regularly are outperformed by a wide margin stymie sound financial planning by artificially constraining resources and delaying needed investments. While the exact balance will be different in different communities and contexts, the best revenue projections are the ones that turn out to be a little bit conservative. For example, jurisdictions with robust fund balances can afford to be more optimistic in their projections and proceed with higher levels of investment, while communities with lower fund balances should exhibit more caution.

Philadelphia's long track record of accuracy in revenue projection is laudable and every effort should be made to sustain and enhance this level of precision. But even the best econometric models and subject matter experts cannot be expected to foresee everything that can affect revenue collections. Given that,

Philadelphia should continue efforts to build reserves to at least its own internal goal of 6 percent to 8 percent of revenues, as well as eventually to the level recommended by the Government Finance Officers Association (17 percent of revenues or spending) and maintain flexibility in its budget and operations.

About the Peer Cities

There is no place quite like Philadelphia – with the same revenue structure, demographics, economic conditions, and budget organization. It's impossible to know if another group of local government financial staffers, econometric consultants, and other experts would have fared better or worse at making accurate revenue projections for Philadelphia. Lacking a local government multiverse to explore all possible parallel paths to revenue projections, PICA selected a group of cities that shared characteristics that are likely to impact revenue projections and collections. The characteristics include population/budget size, whether it provides city and county functions, and similarity of tax structure, economy and/or state legal framework.

Philadelphia is the sixth largest city in the United States, is a combined city/county, and is in the mid-Atlantic and doesn't rely on local property taxes for most of its General Fund revenue (just 13 percent), which is unusual.

Here's how the peer cities compare:

- Cities with County/Parish functions: New Orleans, Nashville, Washington DC, San Francisco
- Top 10 Cities by Population: Chicago, San Antonio
- Cities with Local Wage or Business Taxes: Seattle, San Francisco, Columbus, Detroit, Washington DC, Pittsburgh
- Cities Nearby: Washington DC, Baltimore, Pittsburgh

City	City + County Functions	Similar Tax Structure	Average Revenue Share from Real Estate Tax
Philadelphia	Yes	Yes	13%
Chicago	No	No	0%
Columbus	No	Yes	7%
Detroit	No	Yes	15%
Seattle	No	Yes	21%
Pittsburgh	No	Yes	27%
Washington DC	Yes	Yes	28%
San Francisco	Yes	Yes	33%
New Orleans	Yes	No	37%
San Antonio	No	No	45%
Baltimore	No	No	49%
Nashville	Yes	No	55%

About the Data Analysis

The analysis utilized original projections and actual collections data for the General Fund from the 20 most recent ACFRs for each city in the study (except for San Francisco, which was missing 2 years of data). ACFRs were obtained from the websites of each city or via email from their Finance/Controller's Offices. Although apples to apples comparison of budget and financial data is not possible, the standardization of the ACFR is the most consistent data source across cities and over time.

For both all revenues and tax revenues, the absolute difference between the original estimate and actual collections was calculated for each year and then the average of those absolute differences over the twenty years for each city was calculated to determine the mean absolute percentage error.

About the Report

This report was written and edited by Marisa Waxman, with support from ChatGPT 4.0.