

How the Pandemic Has Affected the City's Economy and Jobs

First findings of a series based on new research show Philadelphia is experiencing lingering job losses, with Black and female workers hit hardest

To assess the level of remote work activity over the next several years, Econsult Solutions Inc., developed estimates based on two data points drawn from different approaches to assessing the phenomenon. These approaches are referred to in the report as “low end” and “high end” estimates. This characterization should not be understood to imply that these estimates represent the floor or ceiling of possible work-from-home outcomes.

The analysis seeks to define scenarios in terms of “net new” remote work activity relative to pre-pandemic work-from-home levels. It factors in potential changes in both in-commuting and out-commuting from the city, as well as the potential for workers to develop a “hybrid” schedule of partial remote work. The goal is to estimate the net change in the workforce located within Philadelphia on a given day by using two approaches:

- An observed data approach, which ascertains reported work-from-home levels over the course of the pandemic and derives an estimate of ongoing levels.
- An occupational approach, which assesses the viability of different job functions for remote work and derives an estimate of likely ongoing levels.

Observed data approach (low scenario)

The U.S. Bureau of Labor Statistics (BLS) added questions to its monthly Current Population Survey starting in May 2020 to help assess COVID-19's impact on the labor market. From this survey, BLS publishes a monthly table of the percentage of workers who “teleworked or worked at home ... specifically because of the coronavirus pandemic.”

As captured in this dataset, the national share started at 35% in May 2020 and fell to 13% in August 2021. However, alternative indicators suggest that this measure may be incomplete as a representation of work-from-home activity:

- Data published by security provider Kastle Systems based on access card data for the buildings it secures indicates that office occupancy was around 30% to 35% of pre-pandemic levels in the 10 largest metro areas in the country during summer 2021, with similar rates seen in Philadelphia.¹ This would indicate remote work above 50% in the office sector, well above the rates observed in the BLS data for finance (30%) and professional services (26%).
- Survey data within a working paper published by economists for the National Bureau of Economic Research found that as of March 2021, employees supplied 45% of paid labor days from home.²
- Survey data from Gallup found that 51% of the full-time workforce was working from home as of April 2021.³

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For various reasons, these data sources may not accurately reflect or be fully representative of the entire workforce. Nonetheless, they suggest that BLS data may not be accounting for a substantial share of remote workers.

Over the medium term, it is anticipated that more workplaces and workers will return to an in-person setting. We would therefore expect a continued decline in the share of people reporting that they are working from home because of the pandemic.

Counteracting this force, the evidence suggests that there will be additional new remote workers. Such work is likely to become entrenched for a segment of the population due to worker preferences, available technology, and cost savings for employers. In addition, new firms may design business models consistent with remote work practices.

Although the balance of these forces is unknown, the BLS data appears to provide a relatively conservative estimate of the future proportion of remote work. Accordingly, it is used here as a “low end” scenario for the purpose of illustrating remote work’s potential impacts on commuter flows in Philadelphia.

Remote work proportions by sector reflected in the July 2021 BLS survey data were applied to the composition of the Philadelphia workforce by sector to yield an order-of-magnitude estimate of remote workers with Philadelphia-based employers. Since this estimate represents “net new” remote work relative to pre-pandemic levels, an estimate of pre-pandemic remote work levels was first developed and estimated at 6%, representing about 40,000 workers at Philadelphia-based employers.⁴ The net new calculation was then expressed as a share of the full workforce.

Under this scenario, Philadelphia would see about 97,000 net new remote workers relative to 2019, the year before the pandemic, representing about 14% of the workforce.

Remote work estimates for Philadelphia are slightly above the national survey data used as a benchmark (13%) because the sectoral composition of Philadelphia’s economy is weighted toward sectors with higher work-from-home activity, such as professional and business services, and finance and information.

Occupational approach (high scenario)

An alternative approach is to consider the suitability of various job functions within sectors to remote work. McKinsey Global Institute’s report “The Future of Work After COVID-19” produced estimates of the “effective potential,” the percentage of workers within each industry who could work from home with little to no productivity loss. Estimates derived from an occupation-based approach imply that most work that can be productively done remotely ultimately will be done remotely a significant portion of the time. This analysis yields an estimate of an effective potential of 29% remote work throughout the U.S. workforce without productivity loss.

These proportions were used to define a high scenario for remote work in Philadelphia over the medium term. Assuming that health and safety considerations recede from the levels seen thus far, market-based forces will likely be the largest determinant of the level of remote work.

McKinsey’s “effective potential” data was adjusted to the composition of the Philadelphia workforce to present a high scenario for net new Philadelphia workers who may rely on remote work going forward—after pre-pandemic remote workers were filtered out. Under this scenario, Philadelphia would see about 184,000 net new remote workers relative to before the pandemic, representing about 27% of the workforce.

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Daily net change in commute flows

Next, these potential low and high work-from-home scenarios were analyzed in terms of their impact on daily commute flows for Philadelphia. Both inflow and outflow effects from remote work are relevant to determine the spending power present in the Philadelphia economy on a given workday. Changes in commute flows are estimated in this analysis as a function of the balance between:

- Previous in-commuters, who would work remotely rather than travel into the city.
- Previous out-commuters, who would work remotely from Philadelphia while not traveling to a city-based workplace.

Commute flow changes are estimated by analyzing each sector's resident and nonresident composition, based on 2019 American Community Survey Public Use Microdata Sample (ACS PUMS) data. For each sector, estimates are derived both for the share of jobs located in the city held by Philadelphians and for the percentage of residents who traveled to workplaces outside the city.

To express this calculation in terms of the change in workers in Philadelphia on a given workday, it was assumed that half of the workers eligible for remote work would work from home full time, while the remaining half would split their time between the office and home. This approach in effect assumes that the remote work level on any given day is 75% of the overall remote work share of the workforce.

For each sector and scenario:

The reduction in prior in-commuters was estimated by multiplying the employment in the sector by the resident share, and the resulting estimate was multiplied by the work-from-home proportions derived from the adjusted low and high scenarios.

The increase in prior out-commuters was estimated by multiplying estimates of employed Philadelphia residents by sector (derived from ACS PUMS analysis) by the out-commuter share, and the resulting estimate was again multiplied by the work-from-home proportions derived from the adjusted low and high scenarios.

The potential net change was then calculated by combining these potential changes in inflow and outflow by sector and in total.

¹ Kastle Systems, "Workplace Occupancy Barometer," Sept. 8. 2021, <https://www.kastle.com/safety-wellness/getting-america-back-to-work/>.

² J.M. Barrero, N. Bloom, and S.J. Davis, "Why Working From Home Will Stick" (working paper, National Bureau of Economic Research, Cambridge, MA, 2021), <https://www.nber.org/papers/w28731>. Notably, this study projects a future work-from-home proportion of about 20% of workdays based on forward-looking survey data.

³ L. Saad and J.M. Jones, "Seven in 10 U.S. White-Collar Workers Still Working Remotely," Gallup, May 17, 2021, <https://news.gallup.com/poll/348743/seven-u.s.-white-collar-workers-still-working-remotely.aspx>.

⁴ Commute data from the 2019 American Community Survey indicates a national work-from-home percentage of 5.7%, and similar levels for workers in the Philadelphia metro area (5.9%) and among Philadelphia residents (5.1%).