

Remote Work and Productivity Growth 2019–23

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Disclaimer: All views expressed here are those of the author and do not necessarily reflect the views or policies of the U.S. Bureau of Labor Statistics.

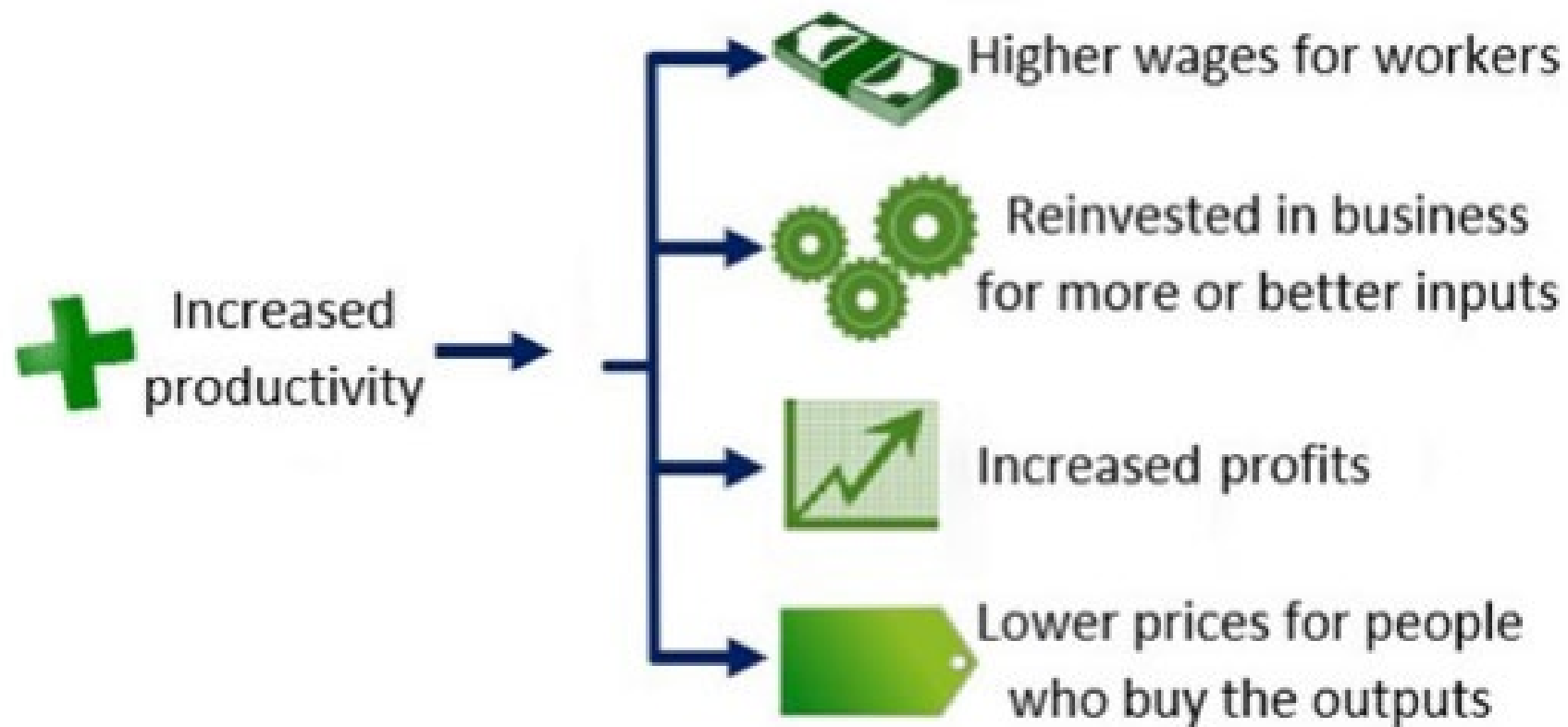


What is Productivity?

- A measure of economic performance that indicates how efficiently inputs are converted into output.
- Inputs - any resource used to make goods and services
 - can include materials, machinery, electricity, business services, and the time people spend working
- Output - the amount of goods or services produced



Productivity is Important for Understanding Economic Growth



Productivity Measured by BLS

- Labor Productivity = $\frac{\text{Output}}{\text{Hours Worked}}$
- Total Factor Productivity (TFP) = $\frac{\text{Output}}{\text{Combination of Inputs}}$

Inputs can include capital, labor, energy, materials, and purchased services.



Productivity and Remote Work Previous Research

- Labor Productivity primarily studied
- Economy/Sector Level
- Individual Companies/Workers Productivity

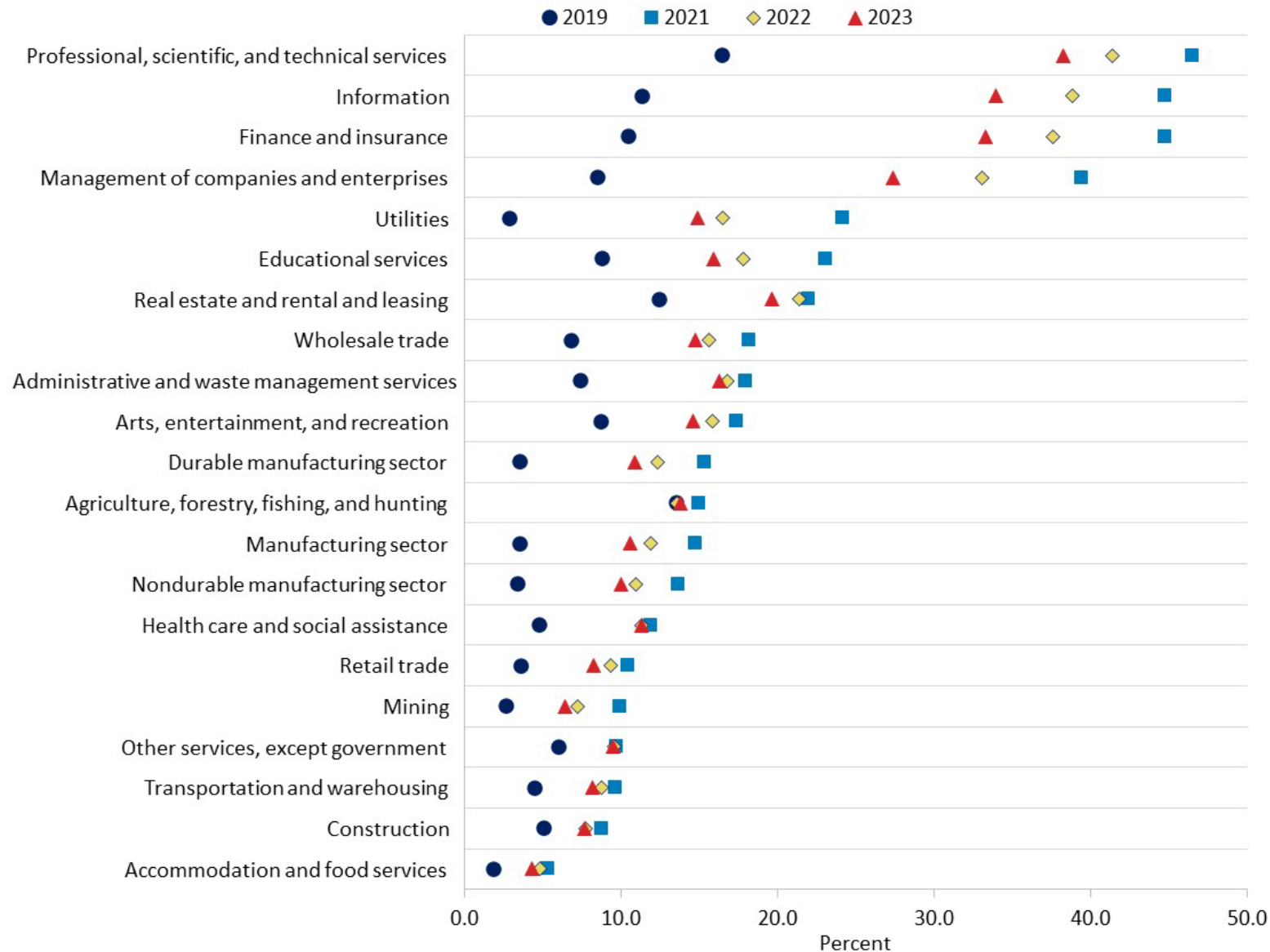


Productivity and Remote Work

- Our study uses Total Factor Productivity 61 detailed industries and 21 major industries
- Remote work is based on answering “Worked from home” to “How did this person usually get to work LAST week?” American Community Survey (ACS)

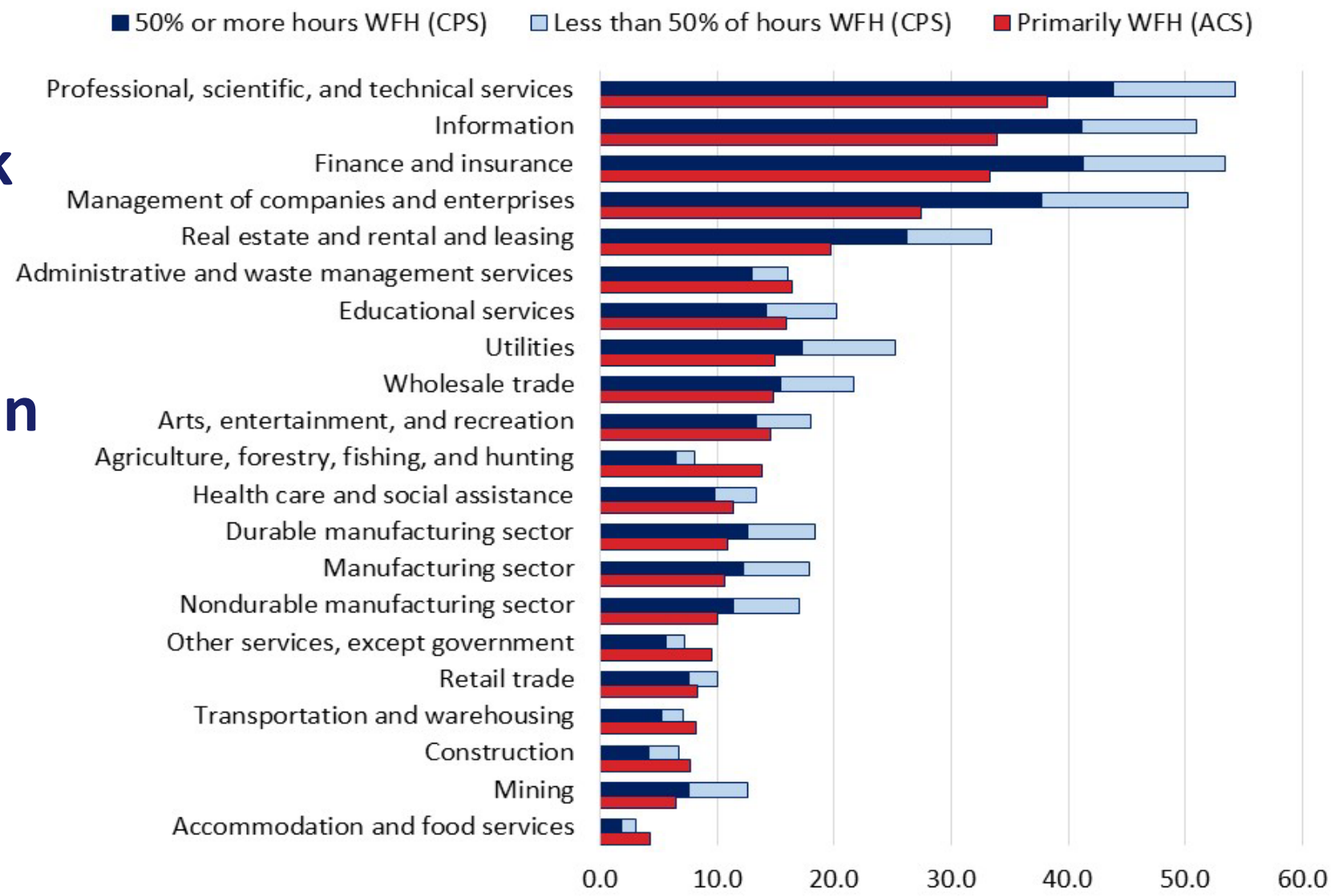


The rise in remote work across 21 major industry groups



Mean = 9.9%
from 2019–23

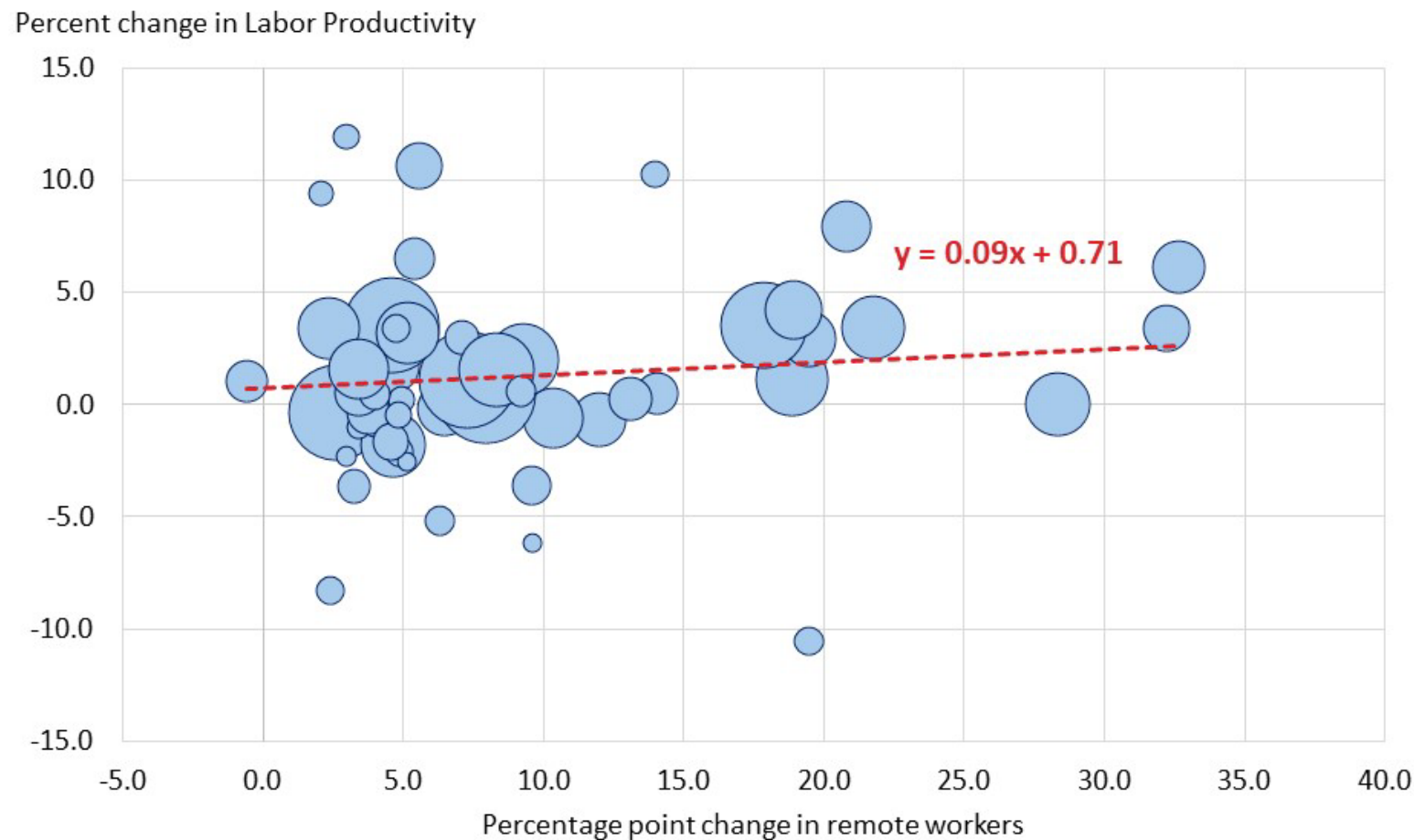
Comparison of work from home in the Current Population Survey and American Community Survey by major industry group, 2023



Source: U.S. Bureau of Labor Statistics, Current Population Survey and U.S. Census Bureau, American Community Survey

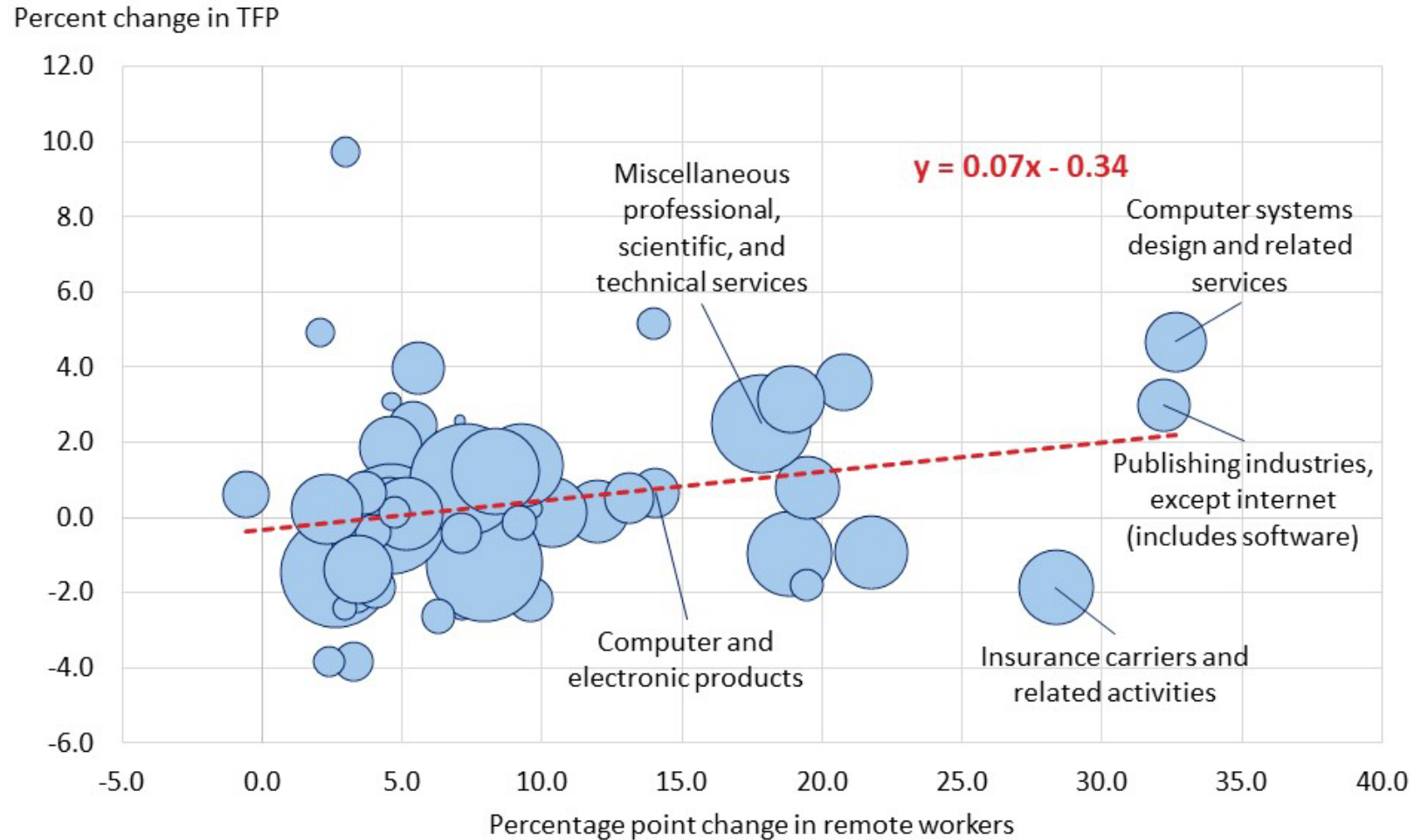


The rise in remote work is **positively correlated** with labor productivity (2019–23)



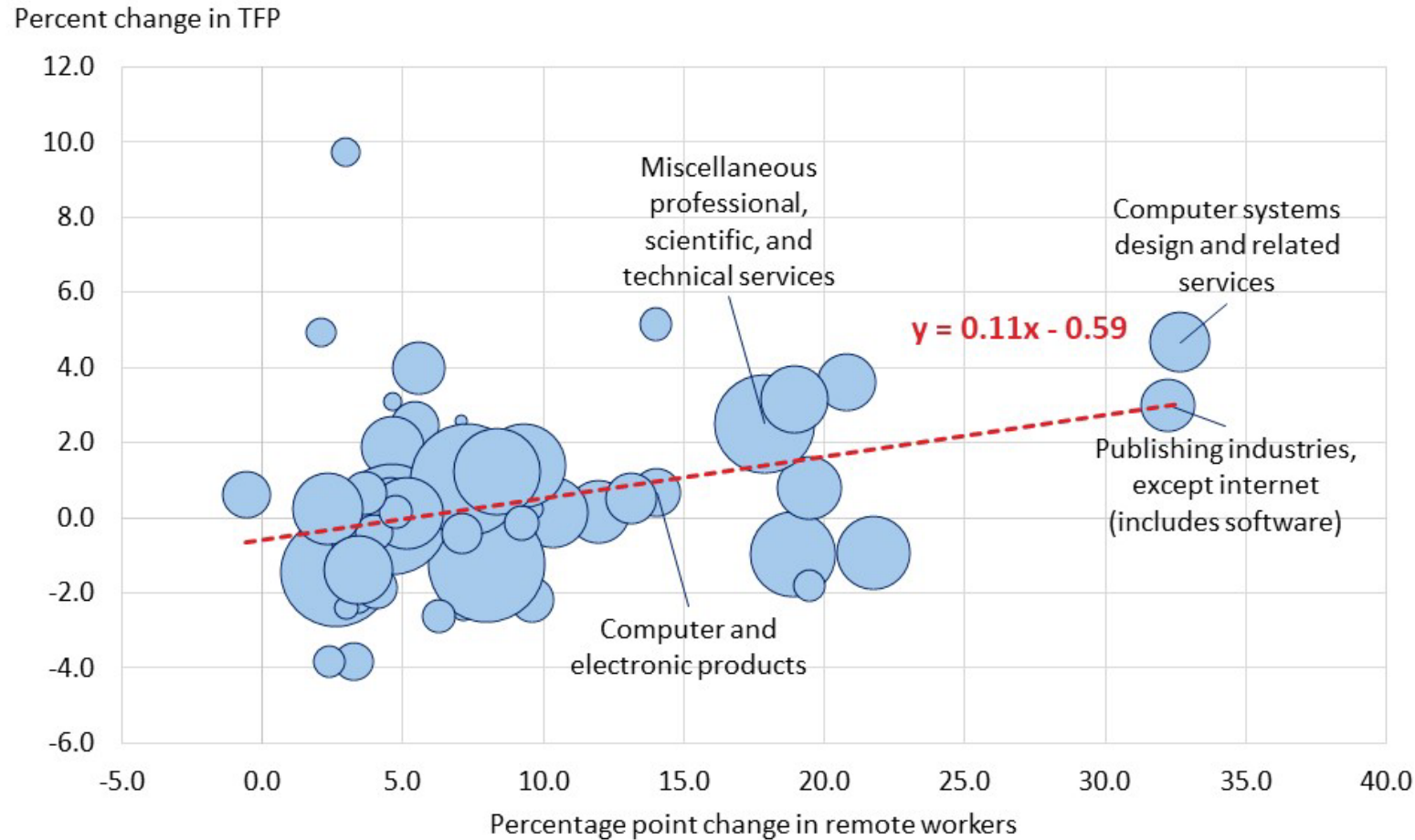
Source: U.S. Bureau of Labor Statistics, Productivity program and
U.S. Census Bureau, American Community Survey

The rise in remote work is **positively correlated** with total factor productivity (2019–23)



Source: U.S. Bureau of Labor Statistics, Productivity program and
U.S. Census Bureau, American Community Survey

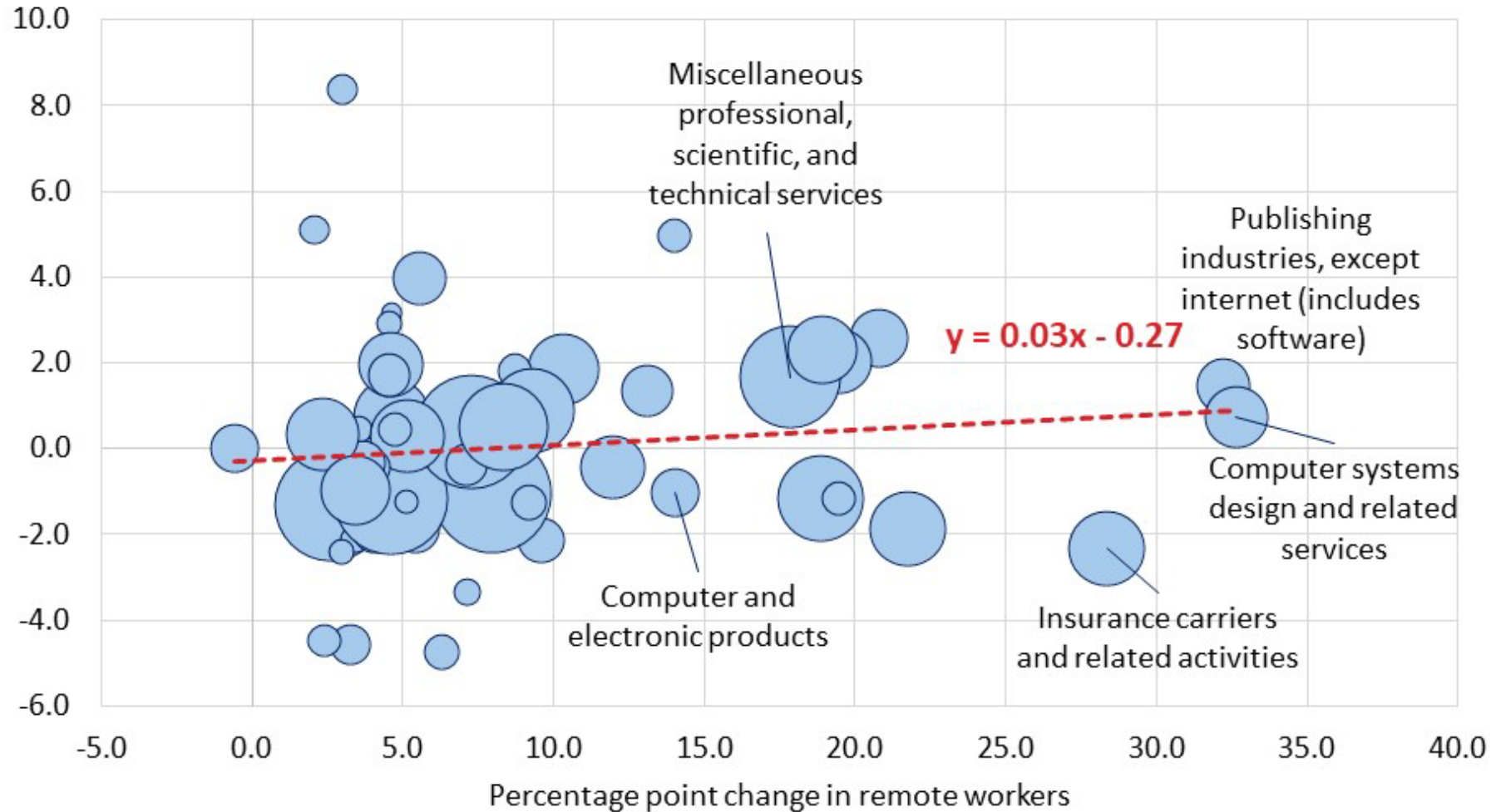
The rise in remote work is **positively correlated** with total factor productivity (2019–23), excluding insurance



Source: U.S. Bureau of Labor Statistics, Productivity program and
U.S. Census Bureau, American Community Survey

Excess TFP Growth, 2019-23

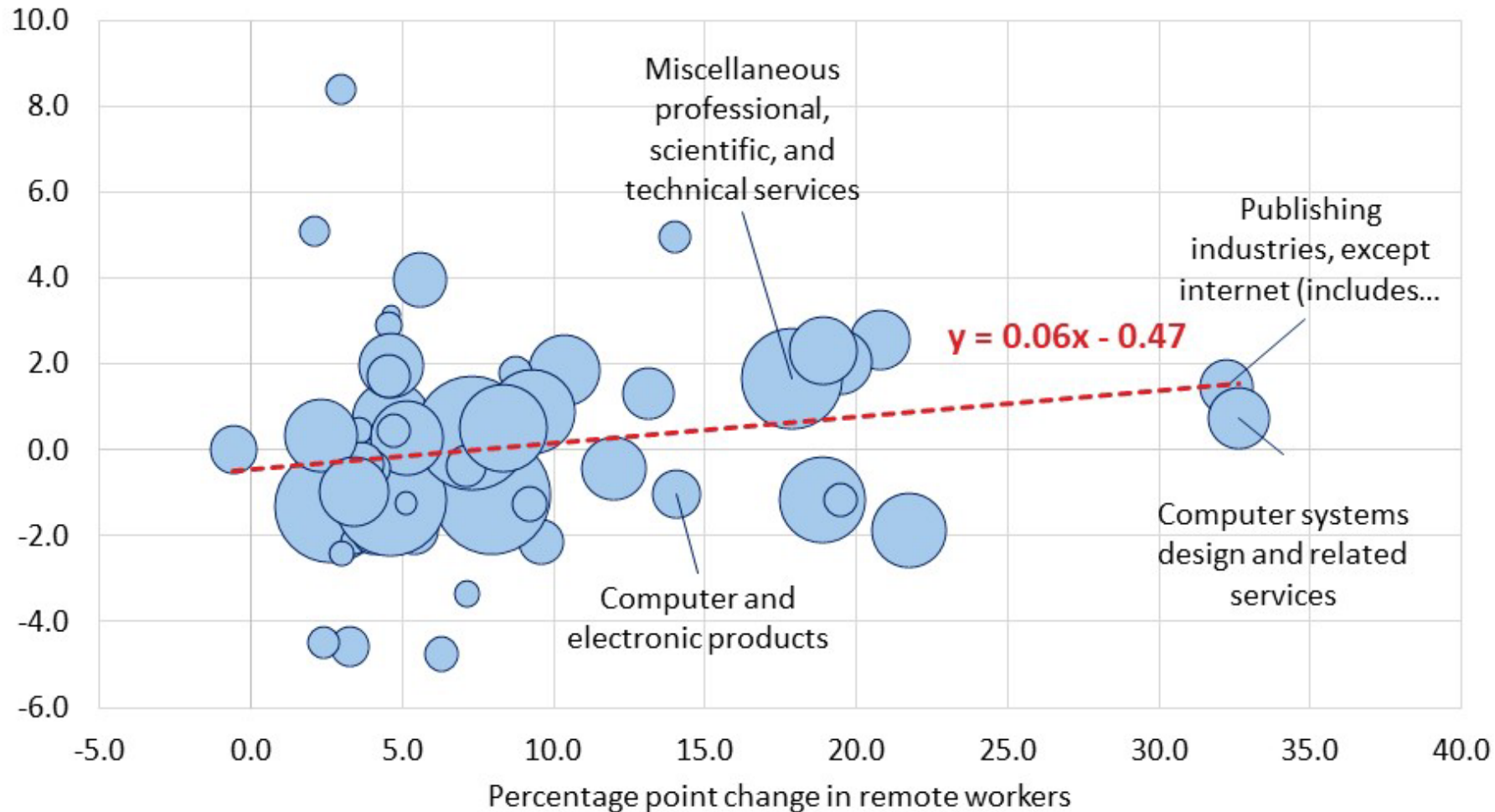
Excess TFP growth (percentage points)



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

Excess TFP Growth, 2019-23, without insurance

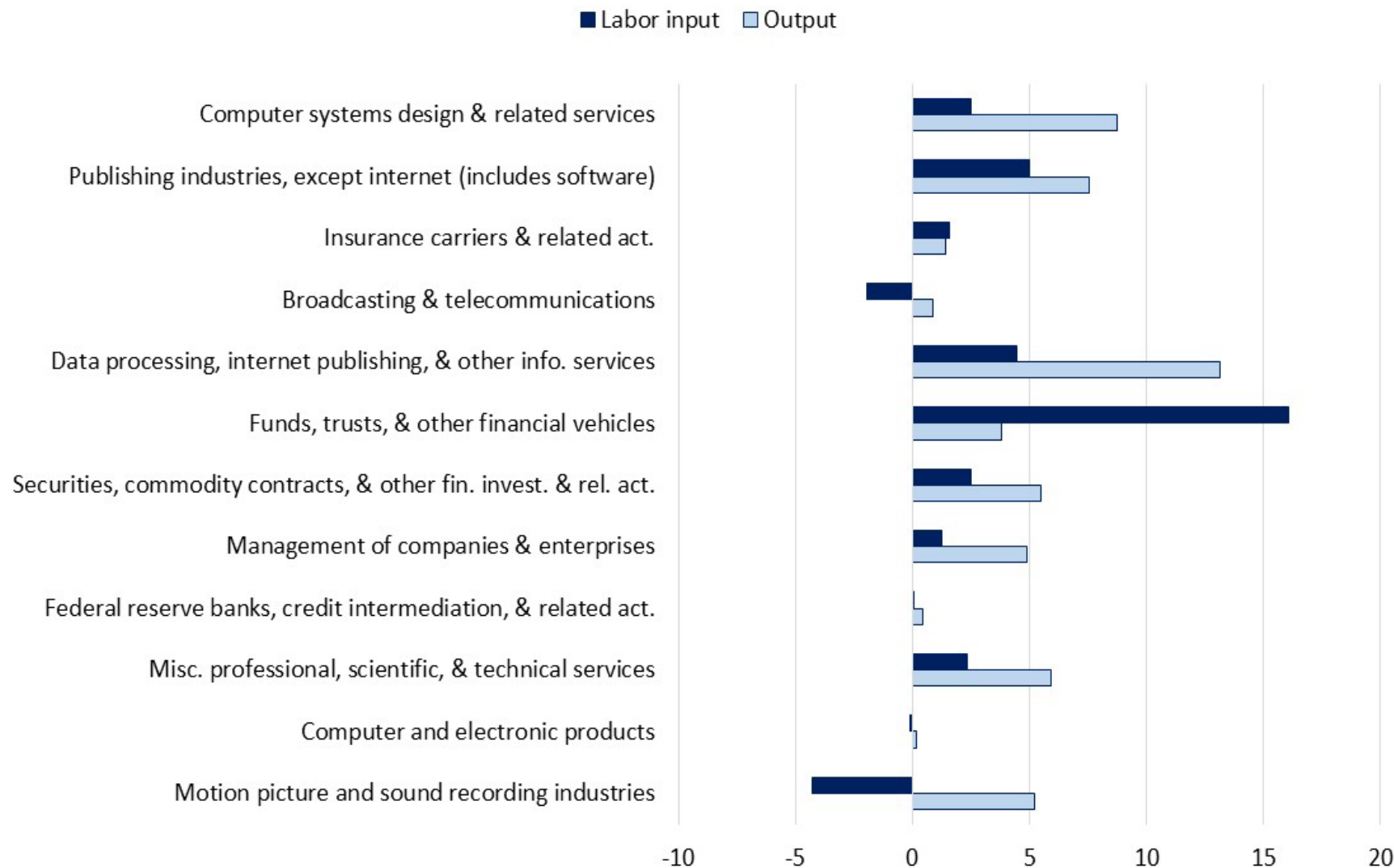
Excess TFP growth (percentage points)



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

Output growth and labor input growth in the 12 detailed industries with the largest increases in remote work (2019–23)

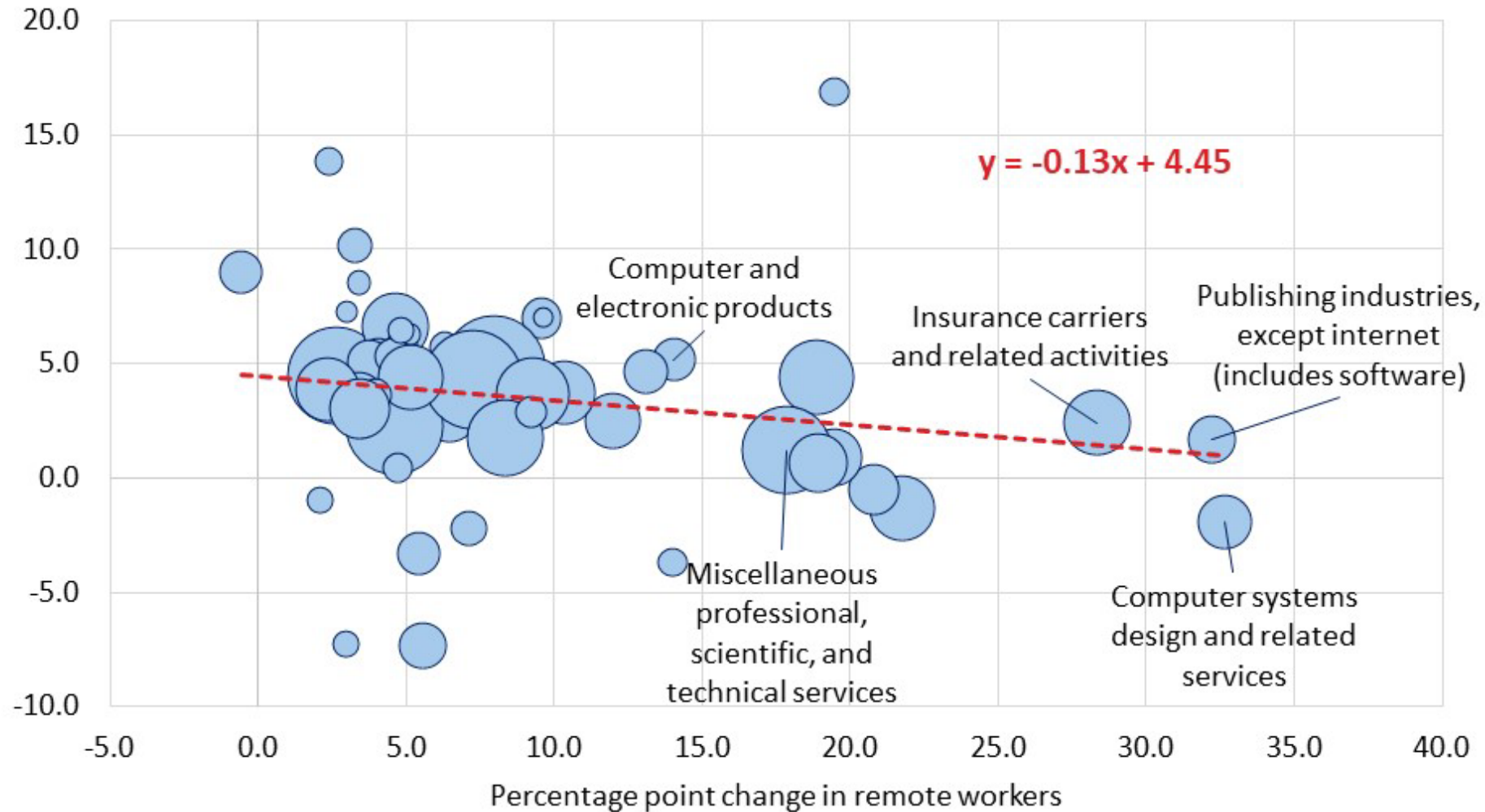
■ 10 of the 12 increased output without increasing labor by the same percentage



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

Remote work and unit labor costs, 2019–23

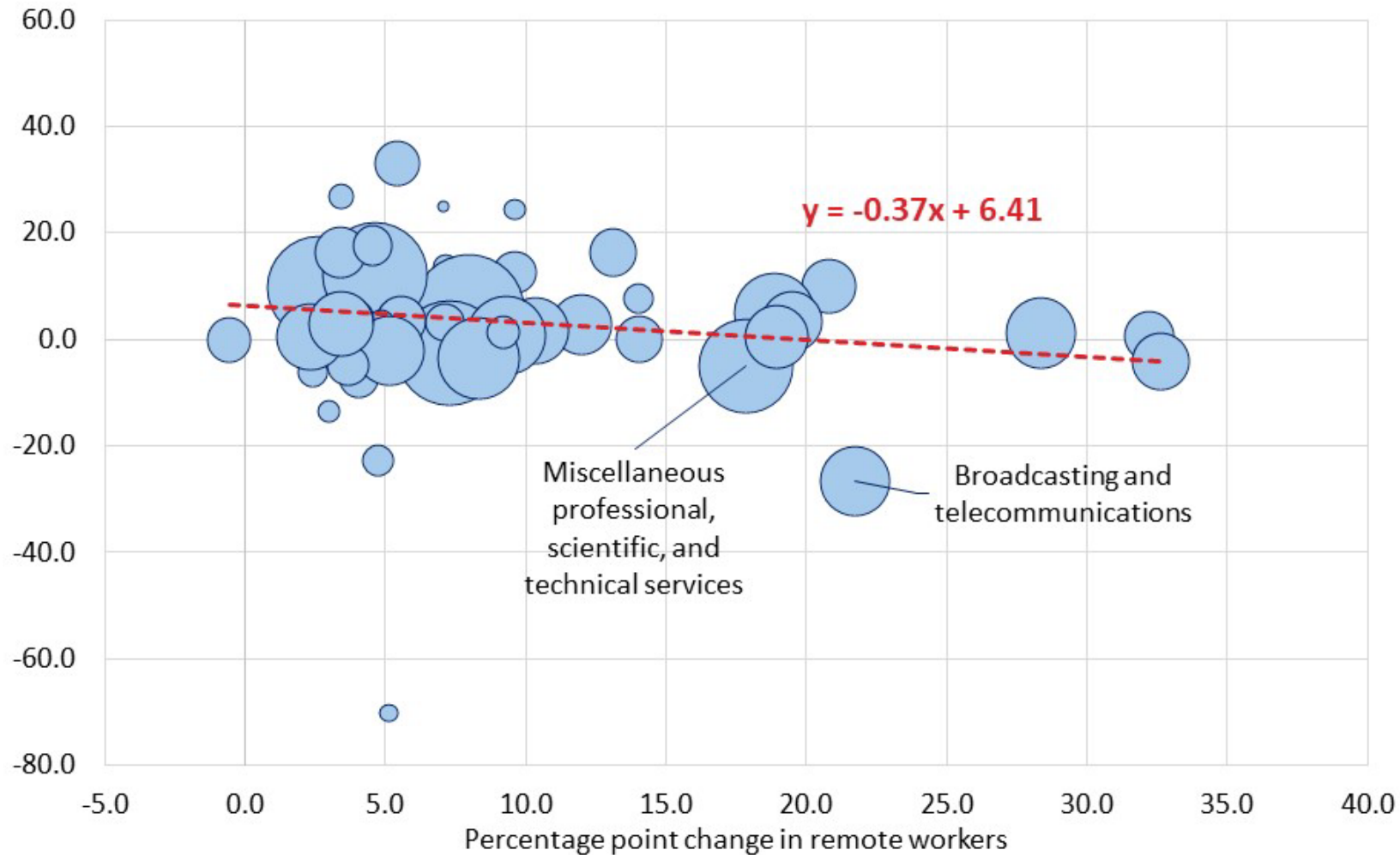
Percent change in unit labor costs



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

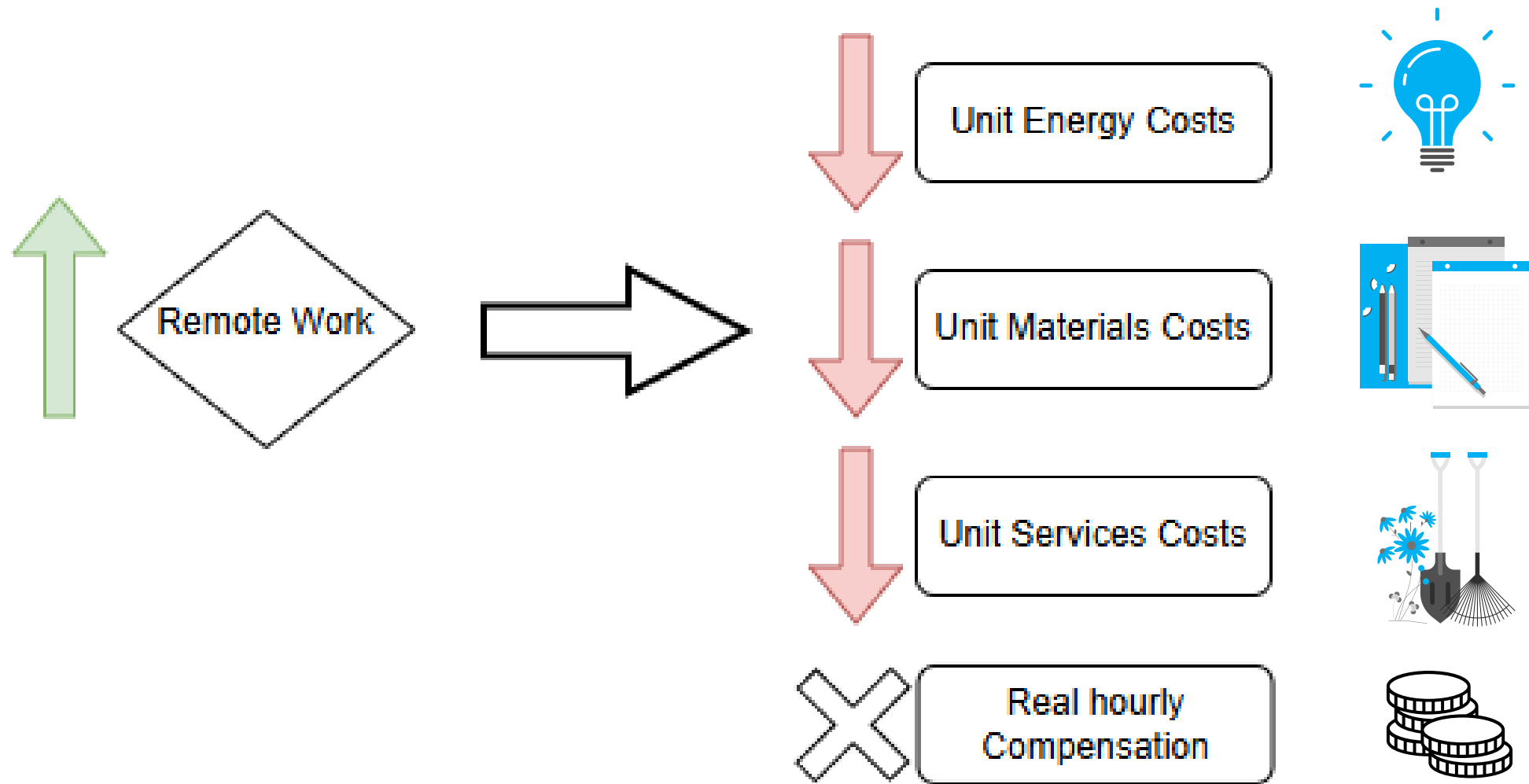
Remote work and unit office building costs, 2019–23

Percent change in unit office building costs

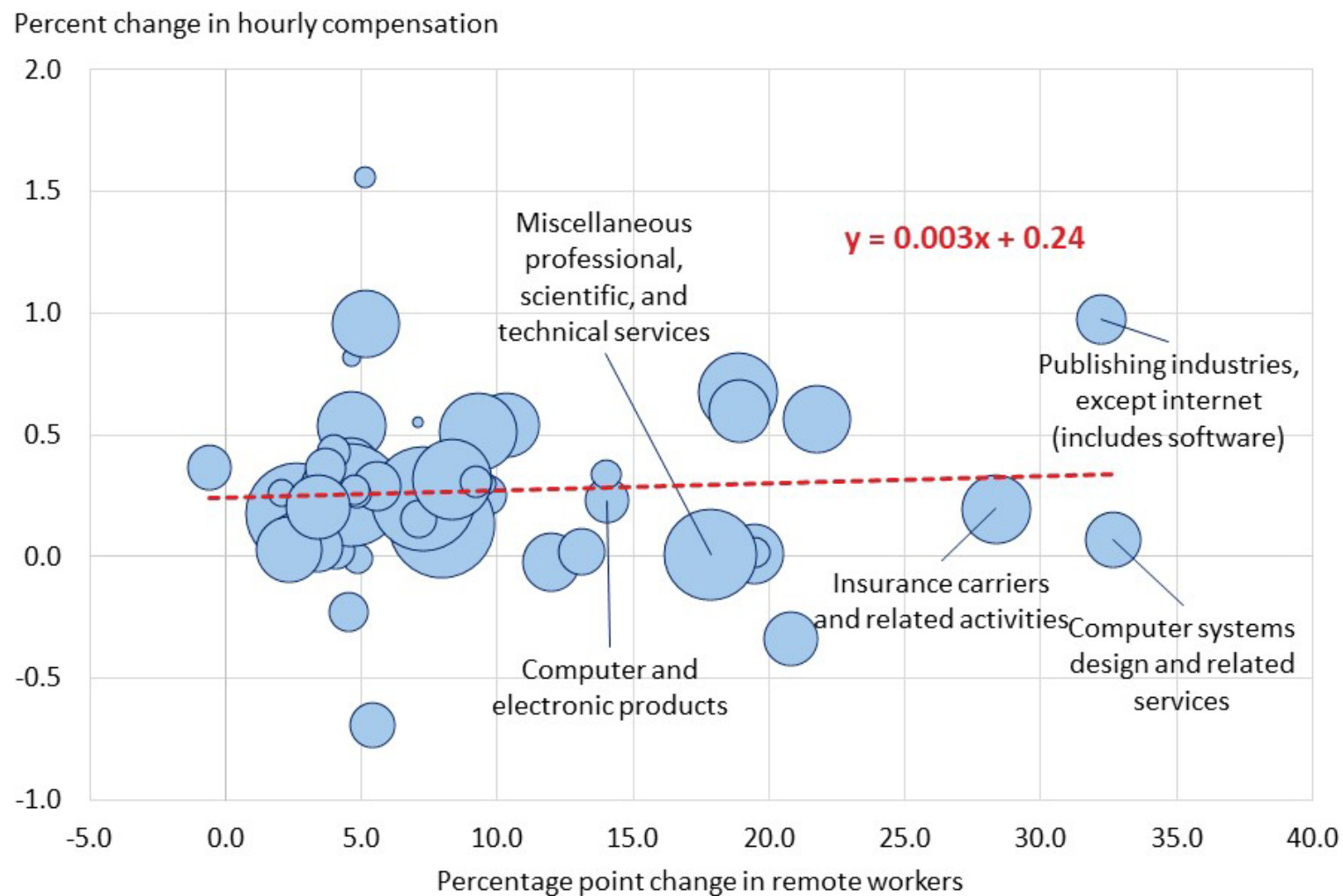


Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

2019–23 Correlations



Remote work and hourly compensation, 2019-23



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

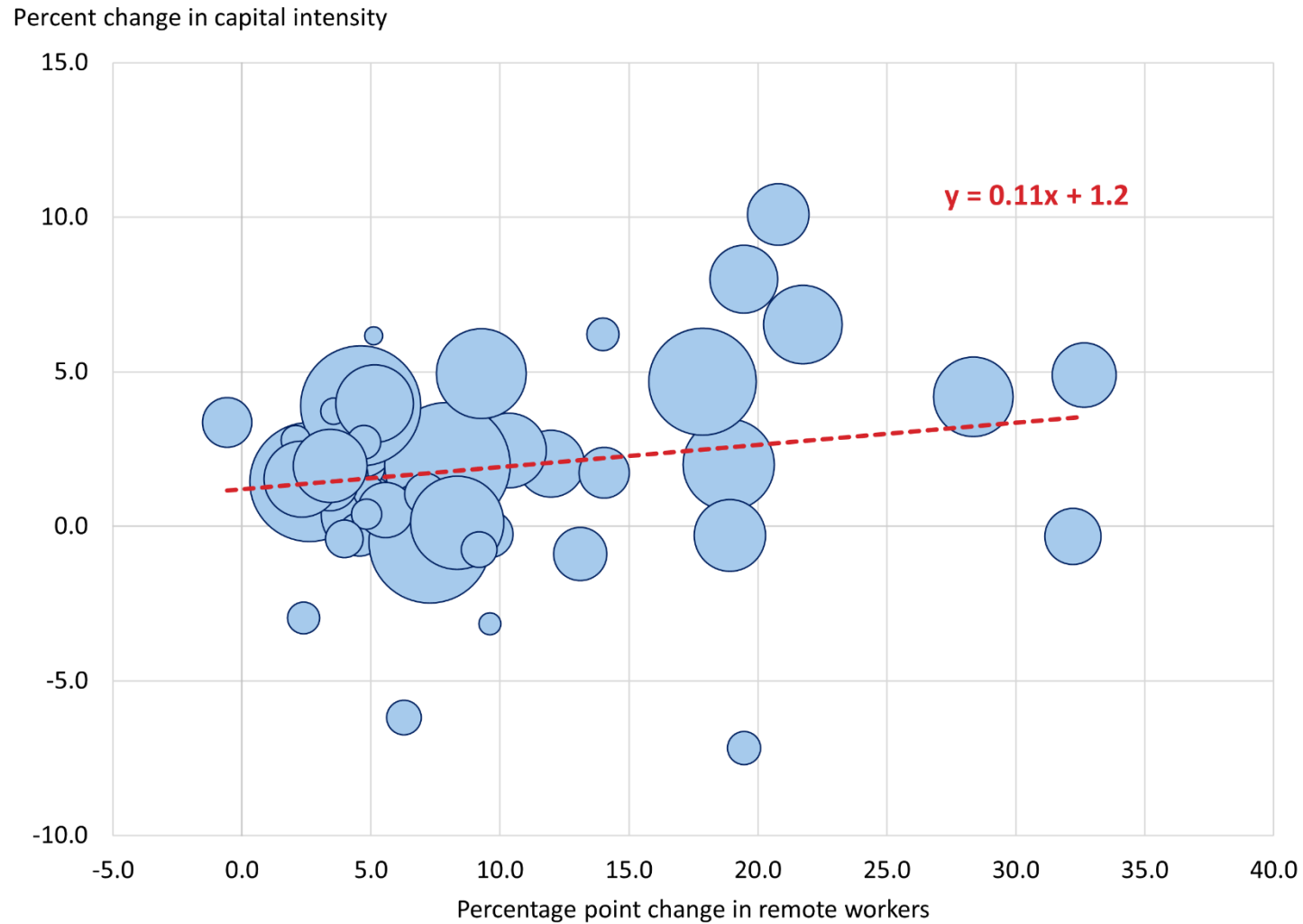
Conclusion

- There is a positive relationship between the percentage point change in remote work and productivity.
 - ▶ Labor Productivity: 0.03 (2019–21) and 0.09*(2019–23)
 - ▶ Total Factor Productivity: 0.08* (2019–21) and 0.07 (2019–23)
- Unit labor and nonlabor costs (capital, office building, energy, materials, and services) decline with percentage point increases in remote work.
- TFP gains are not passed on to workers in terms of real hourly compensation.

Next Steps

- Dig into the capital data
 - ▶ Get a sense for what is driving capital intensity increase

Capital Intensity, 2019–23



Source: U.S. Bureau of Labor Statistics, Productivity program and U.S. Census Bureau, American Community Survey

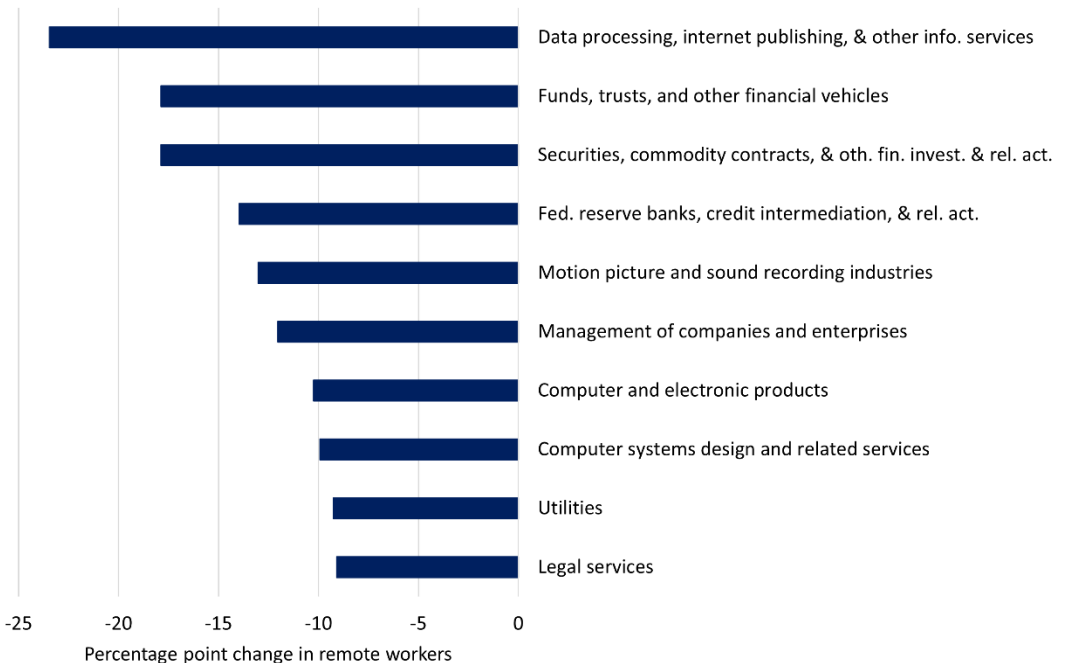
Next Steps

- Dig into the capital data
 - ▶ Get a sense for what is driving capital intensity increase
- Research return to office using 2021–23 data
 - ▶ Hybrid work is growing in 2023.



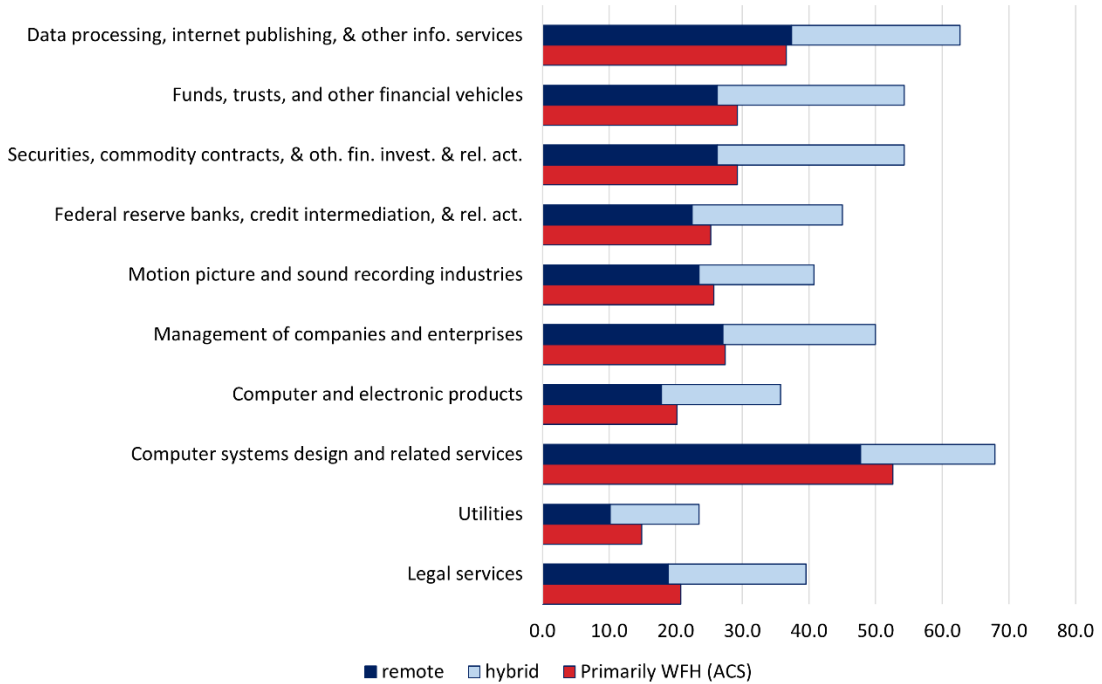
Return to Office

Largest declines, 2021–23



Source: U.S. Census Bureau, American Community Survey

CPS vs. ACS 2023 Work Location



Source: U.S. Bureau of Labor Statistics, Current Population Survey and U.S. Census Bureau, American Community Survey



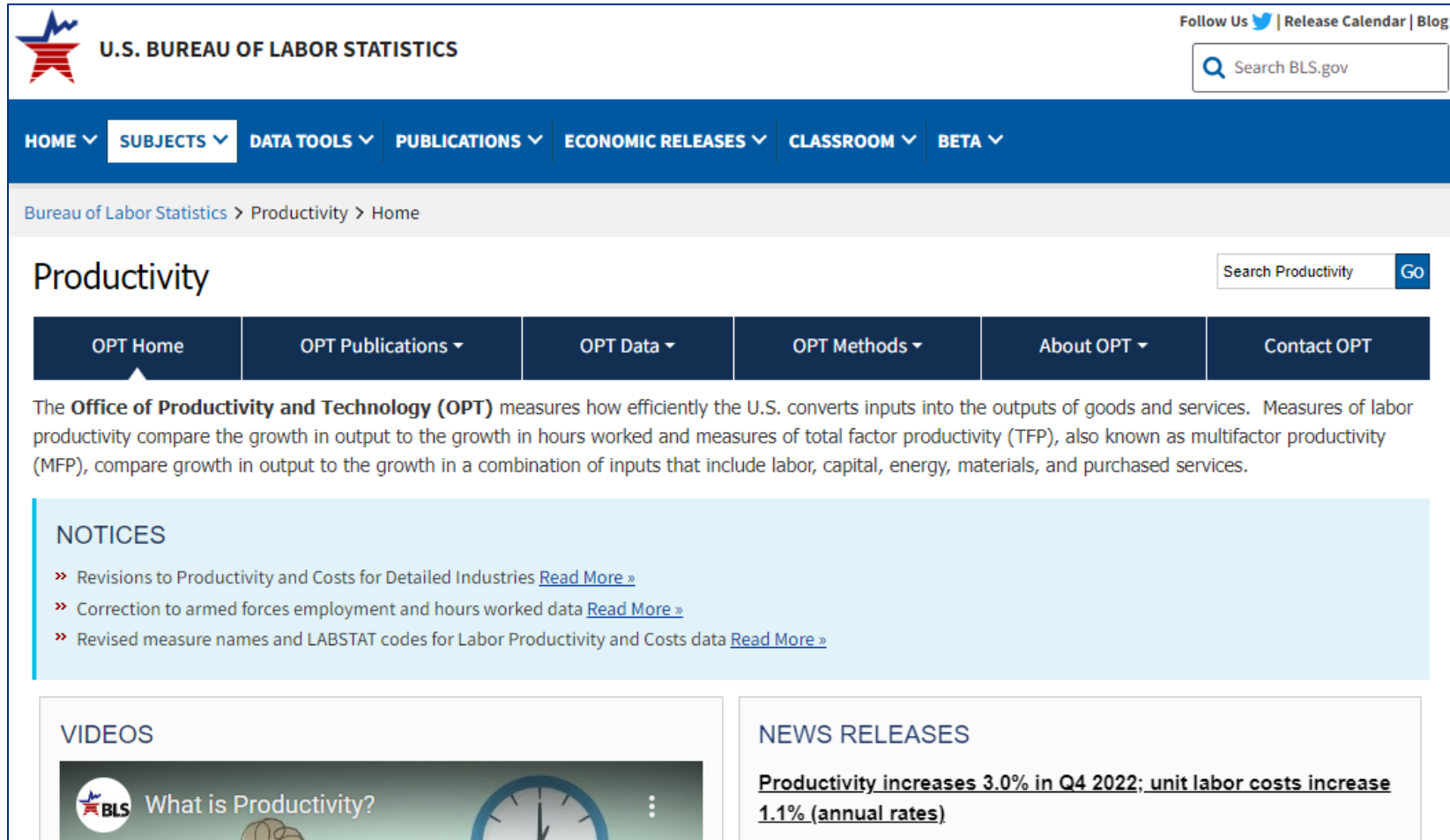
Next Steps

- Dig into the capital data
 - ▶ Get a sense for what is driving capital intensity increase
- Research return to office using 2021–23 data
 - ▶ Hybrid work is growing in 2023.
- How these shocks in organizational process may fade over time similar to a tech boom.



Accessing Productivity Data

bls.gov/productivity/



The screenshot shows the U.S. Bureau of Labor Statistics website. At the top, there is a navigation bar with links for HOME, SUBJECTS, DATA TOOLS, PUBLICATIONS, ECONOMIC RELEASES, CLASSROOM, and BETA. Below this is a search bar labeled "Search BLS.gov". The main content area is titled "Productivity" and includes a sub-navigation bar with links for OPT Home, OPT Publications, OPT Data, OPT Methods, About OPT, and Contact OPT. A paragraph describes the Office of Productivity and Technology (OPT) and its measures of labor productivity, total factor productivity (TFP), and multifactor productivity (MFP). Below this is a "NOTICES" section with three links: "Revisions to Productivity and Costs for Detailed Industries", "Correction to armed forces employment and hours worked data", and "Revised measure names and LABSTAT codes for Labor Productivity and Costs data". At the bottom, there are sections for "VIDEOS" (featuring a video titled "What is Productivity?") and "NEWS RELEASES" (featuring a release titled "Productivity increases 3.0% in Q4 2022; unit labor costs increase 1.1% (annual rates)").

■ OPT Data

- Databases – flat files (txt)
- Tables – excel files
- Charts



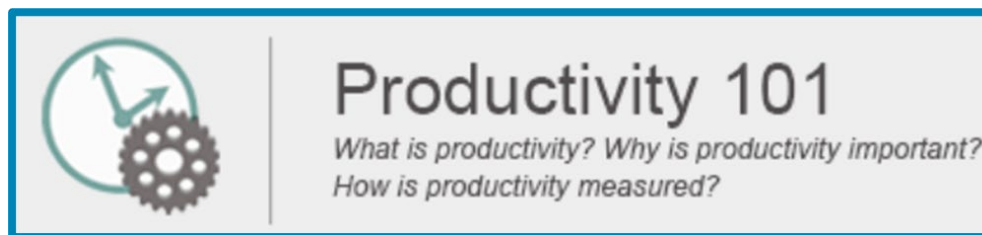
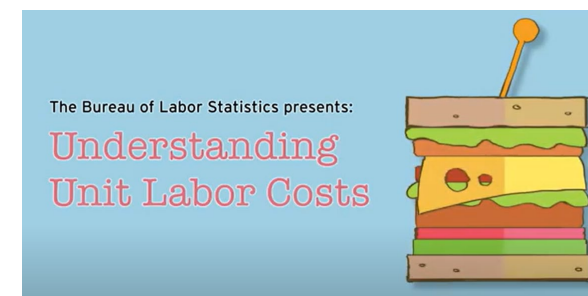
Additional References

www.bls.gov/productivity

- Productivity and remote work

<https://www.bls.gov/productivity/notices/2024/productivity-and-remote-work.htm>

- Staff are happy to help - productivity@bls.gov



Contact Information

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www.bls.gov/productivity and www.bls.gov/dpr

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