



Employment in IP-intensive industries during the COVID-19 pandemic and beyond

Introduction

Recent evidence suggests that innovation in the United States was surprisingly resilient to the historic downturn in economic activity that took place when the COVID-19 pandemic began in March 2020.¹ This resilience was particularly evident in industries that used intellectual property (IP) intensively.² For instance, companies in IP-intensive industries suffered a smaller output loss following the initial COVID-19 shock than did those in non-IP-intensive industries. This Economic Note documents whether employment in IP-intensive industries was also resilient to the COVID-19 pandemic, and explores differences based on the type of IP, such as patent-intensive versus copyright-intensive industries.

IP-intensive industries experienced fewer job losses

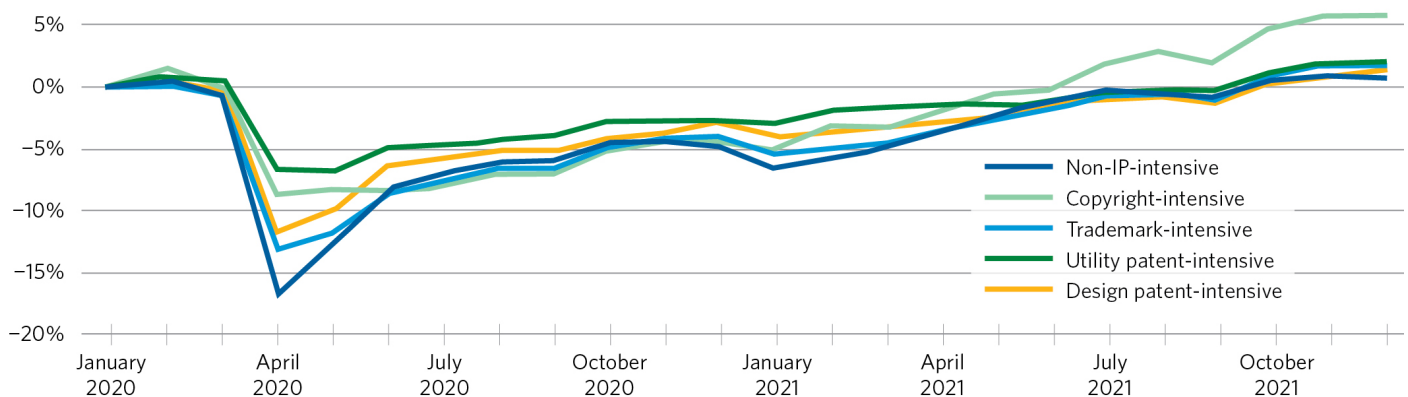
Monthly data from January 2020 through December 2021 show that U.S. employment was hit hardest in the months immediately following the beginning of the pandemic. By April 2020 overall employment levels were 15% lower than in January. However, jobs returned relatively quickly—the initial

employment deficit shrank to 5% by the end of 2020. By the end of 2021, private-sector employment increased slightly over its January 2020 level.

However, the overall private-sector employment numbers hide interesting differences between industries. Figure 1 shows that IP-intensive industries generally suffered fewer job losses (as a share of employment) than non-IP-intensive industries. Due in part to the relatively high share of skilled workers employed in utility patent- and design patent-intensive industries, these groups experienced relatively fewer job losses throughout the first year of the pandemic.³ Among IP-intensive industries, trademark-intensive industries suffered the largest job losses, but still less than non-IP-intensive industries until June of 2020 when job losses were similar to those in the non-IP-intensive industries.

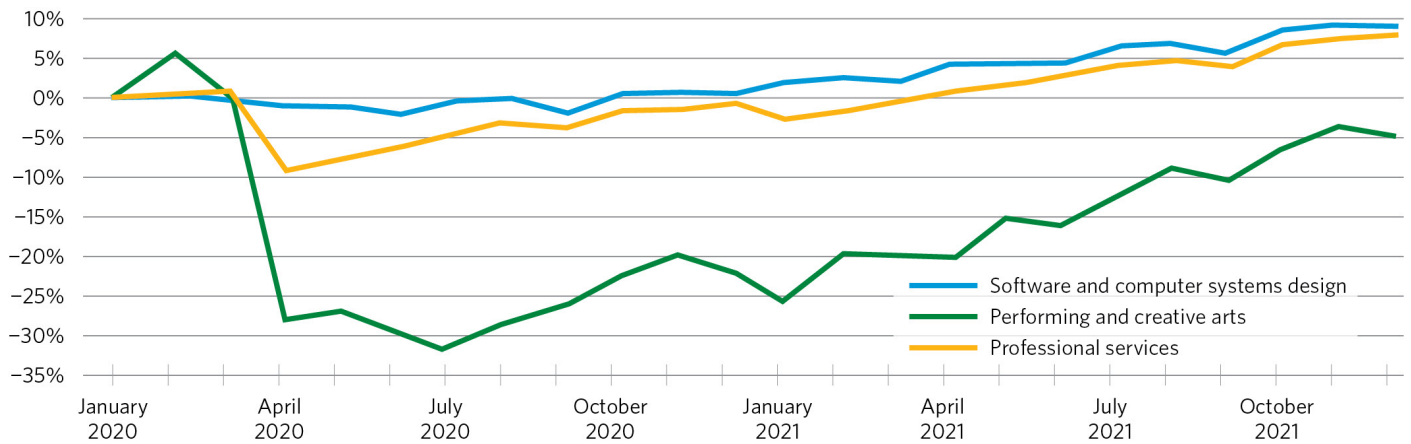
The pandemic employment recovery for copyright-intensive industries was notably different. In the first few months of the pandemic, copyright-intensive industries experienced job losses that were slightly larger than those in utility patent-intensive industries, but less than all other groups. During

Figure 1: Monthly employment levels for IP- and non-IP-intensive industries in 2020 and 2021 (percent change compared to January 2020)



Source: USPTO calculations using data from U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Figure 2: Monthly employment levels for copyright-intensive industries in 2020 and 2021 (percent change compared to January 2020)



Source: USPTO calculations using data from U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

the remainder of 2020, employment in copyright-intensive industries followed the same trend as trademark-intensive and non-IP intensive industries. However, from January 2021 forward, job growth in copyright-intensive industries outpaced all others. This standout performance is explored more deeply in the next section.

Software jobs buoy employment in copyright-intensive industries

As shown in Figure 2, the small employment losses experienced by copyright-intensive industries early in the pandemic reflect the experiences of those working in the software, computer systems design,⁴ and to a lesser extent, the copyright-intensive professional services industries.⁵ These industries employ highly-skilled workers who can work productively from remote locations and who are costly to replace. As highlighted in a 2022 book published by the Centre for Economic Policy Research, “Resilience and Ingenuity: Global Innovation Responses to Covid-19,” firms in these industries saw increased demand for their services as the shift to virtual working environments increased needs for new information and communication technologies.⁶

The recovery time for the copyright-intensive industries overall was initially lethargic because of persistent job losses in the performing and creative arts industries.⁷ Pandemic restrictions shut down performance venues, galleries, and movie theaters, and film productions stalled, contributing to a 20% employment deficit lasting more than a year after the start of the pandemic. At the same time, in the software and computer systems design industries, employment levels were steady and growth after spring 2020 was flat through the remainder of 2020.⁸ Perhaps not surprisingly, these data document that workers in the performing and creative arts were hit harder by the COVID-19 economic shock than the average worker in the pandemic’s first year. Following that initial shock, job growth for these workers outpaced job growth in other copyright-intensive industries, and IP-intensive industries more generally.

Suggested citation: U.S. Patent and Trademark Office, Office of the Chief Economist, 2023. “Employment in IP-intensive industries during the COVID-19 pandemic and beyond,” Economic Note, no. 103, March 2023

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Endnotes

- See R. Miller, W. Park, A.A. Toole, and G. Torres, “Immunity to the COVID-19 shock? The case of US innovation,” in C. Fink, Y. Ménière, A.A. Toole, and R. Veugelers, eds., *Resilience and Ingenuity: Global Innovation Responses to Covid-19*, (London: CEPR Press, 2022). Available from <https://cepr.org/chapters/immunity-covid-19-shock-case-us-innovation>.
- “Intensity” of IP use is measured as the number of IP rights obtained relative to industry employment. An industry is defined as intensive in a given form of IP if the intensity of use of that IP in the industry is greater than the economy-wide average. For more information, see U.S. Patent and Trademark Office, *Intellectual property and the U.S. economy: Third edition* (Alexandria, VA: U.S. Patent and Trademark Office, 2022). Available from <https://www.uspto.gov/sites/default/files/documents/uspto-ip-us-economy-third-edition.pdf>.
- Ibid., Tables 2 and 3.
- These industries include software publishing (NAICS 5112) and computer systems design (5415).
- These industries include other information services (NAICS 5191), specialized design services (5414), advertising and public relations (3418), and other professional, scientific, and technical services (5419).
- C. Fink, Y. Ménière, A.A. Toole, and R. Veugelers (eds), *Resilience and Ingenuity: Global Innovation Responses to Covid-19* (London: CEPR Press, 2022). Available from <https://cepr.org/chapters/immunity-covid-19-shock-case-us-innovation>.
- These industries include publishers (NAICS 5111), motion pictures (5121), sound recording (5122), radio and television broadcasting (5151), pay and specialty television (5152), performing arts companies (7111), and independent artists (7115).
- Combined, these two groups of industries accounted for two-thirds of employment in the copyright-intensive industries as a whole at the end of 2019.