NATIONAL FOUNDATION FOR AMERICAN POLICY

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UPDATED ANALYSIS: EMPLOYMENT DATA FOR COMPUTER OCCUPATIONS FROM JANUARY 2020 TO MARCH 2021

EXECUTIVE SUMMARY

There are over 1 million unique active job vacancy postings in computer occupations in the United States as of March 7, 2021, up 11% from 12 months earlier, based on data from Emsi Job Posting Analytics, according to an analysis by the National Foundation for American Policy (NFAP). The unemployment rate in computer occupations is down to 2.3%, below the level of 3.0% in January 2020 before the coronavirus pandemic started. There is not a fixed number of jobs, and people with high skills often create more jobs for people with complementary skills. Still, even if one adopts a zero-sum approach, there are nearly 20 times more job vacancy postings in computer occupations than new H-1B petitions typically used by companies in computer occupations each year. There are also likely many more openings than publicly posted positions. The latest employment data call into question a proclamation blocking the entry of H-1B visa holders and other immigration restrictions that are based on the premise U.S. workers need dramatic new protections against foreign-born scientists and engineers. The restrictions include two new regulations on H-1B visas published by the Trump administration before Donald Trump left office. One rule aims to price employment-based immigrants and H-1B visa holders out of the U.S. labor market. The Biden administration must decide how to proceed on the regulations.

Table 1
Active Job Vacancy Postings in Computer Occupations

Occupations	Active Job Vacancy Postings (February 8 to March 7, 2021)	Change from 12 months Earlier (February 8 to March 7, 2020)
Software Developer and Software Quality Assurance Analyst and Tester	378,197	+14%
Computer Occupations, All Other	194,130	+15%
Computer Systems Analyst	101,737	+6%
Network and Computer System Administrator	101,153	+6%
Information Security Analyst	67,995	+17%
Computer and Information Systems Manager	61,621	+27%
Electrical Engineer	37,058	-5%
Computer Programmer	26,241	-14%
Computer and Information Research Scientist	21,767	+21%
Database Administrator	17,213	-4%
Electronics Engineer (except computer)	15,118	+6%
Computer Hardware Engineer	9,794	+14%
Computer Network Architect	6,804	+3%
TOTAL	**1,038,828**	**+11%**

Source: Emsi Job Posting Analytics; National Foundation for American Policy. According to Emsi, “All job posting counts reflect unique postings that were active during the indicated time frame,” February 8, 2020 to March 7, 2020 and February 8, 2021 to March 7, 2021.

UNIQUE ACTIVE JOB VACANCY POSTINGS IN COMPUTER OCCUPATIONS

An indicator of the strong demand for technical talent is that as of March 7, 2021, there were 1,038,828 unique active job vacancy postings online in the previous 30-day period for jobs in the most common computer occupations that typically require at least a bachelor's degree, according to Emsi Job Posting Analytics.[1] That represents an 11% increase compared to 12 months earlier (February 8, 2020 to March 7, 2020) for the number of active vacancy postings in the most common computer occupations. Ten of the 13 occupational categories showed an increase, in some cases significant increases, in active job vacancy postings compared to 12 months earlier. (See Table 1.)

March 7, 2020, is approximately a week before the general shutdown of much in-person economic activity in the United States that took place due to the coronavirus pandemic. "Computer jobs were already fast-growing before the pandemic, but it is still remarkable to see an 11% increase in job postings from the period just before the Covid-related recession hit," said Mark Regets, a labor economist and a senior fellow at the National Foundation for American Policy. "This is consistent with the low unemployment rates we see in computer occupations. Firms have needed a lot of IT (information technology) talent to reorganize their businesses during the pandemic, and many of the changes will be long-term."

The employment postings in computer occupations include 378,197 active job vacancy postings for software developers and software quality assurance analysts and testers, 101,737 for computer systems analysts, 101,153 for network and computer system administrators, 67,995 for information security analysts, and 37,058 for electrical engineers. "All job posting counts reflect unique postings that were active during the indicated time frame," which was February 8 to March 7, 2021.[2] These occupations track those eligible for H-1B visas, according to DHS and BLS data.

The 13 occupational categories covered by this analysis are similar but not identical to the ones NFAP has tracked over the past year. In March 2021, Emsi updated its categories and standard occupational classification (SOC) codes in computer occupations, and NFAP adjusted its tracking of active job vacancy postings accordingly. The current list provides the employment picture for active postings for jobs in common computer occupations that typically require at least a bachelor's degree.

[1] See https://www.economicmodeling.com/job-posting-dashboard/.
[2] Ibid.

To put the more than 1 million active job vacancy postings in computer occupations in perspective, companies can file for only 85,000 new H-1B petitions in a year. About two-thirds of company-sponsored new H-1B petitions, or 56,000 a year, are in computer occupations.[3] That would mean there are nearly 20 times more job vacancy postings in computer occupations than new H-1B petitions typically used by companies in computer occupations each year, even if one adopted a zero-sum approach to jobs. There are likely more openings than posted positions. Moreover, there is not a fixed number of jobs, and people with high skills often create more jobs for people with complementary skills. The H-1B annual limit has been exhausted every year since 2004.

"H-1B visas are important because they generally represent the only practical way for high-skilled foreign nationals, including international students, to work long-term in the United States and have the chance to become employment-based immigrants and U.S. citizens," according to *Forbes.* In short, without H-1B visas nearly everyone from the founders of billion-dollar companies to the people responsible for the vaccines and medical care saving American lives would never have been in the United States."[4]

THE UNEMPLOYMENT RATE IN COMPUTER OCCUPATIONS

The U.S. unemployment rate in computer occupations was 2.3% in February 2021, declining from a 3.0% unemployment rate in computer occupations in January 2020, before the start of the pandemic, according to an NFAP analysis of the Bureau of Labor Statistics' Current Population Survey.[5] In the NFAP analysis of government unemployment rate data, the computer occupations track those listed in the H-1B "characteristics report" for FY 2019 published by U.S. Citizenship and Immigration Services (USCIS).

Table 2
U.S. Unemployment Rate in Computer Occupations

OCCUPATIONS	JANUARY 2020	FEBRUARY 2021
Computer Occupations	3.0%	2.3%

Source: National Foundation for American Policy estimates using Bureau of Labor Statistics' Current Population Survey, January 2020 and February 2021. Not seasonally adjusted. Computer occupations include Computer and information research scientist, Computer and information systems manager, Computer hardware engineer, Computer network architect, Computer programmer, Computer support specialist, Computer systems analyst, Database administrator and architect, Information security analyst, Electrical and electronics engineer, Network and computer systems administrator, Software developer, Software quality assurance analyst and tester, Web and digital interface designer and Web developer.

[3] Table 8B, Characteristics of H-1B Specialty Occupation Workers Fiscal Year 2019 Annual Report to Congress October 1, 2018 – September 30, 2019, USCIS, March 5, 2020.
[4] Stuart Anderson, "The Story Of How Trump Officials Tried To End H-1B Visas," *Forbes*, February 1, 2021.
[5] Note: "The Current Population Survey (CPS) is a monthly survey of households conducted by the Bureau of Census for the Bureau of Labor Statistics," according to BLS.

The U.S. unemployment rate for individuals in computer and mathematical occupations, which appears on the BLS website, was 2.4% in February 2021, lower than the unemployment rate of 3.0% in January 2020, before the spread of Covid-19.[6] The rate in February 2021 is well below the overall national unemployment rate of 6.2%.[7] Computer occupations cover a slightly narrower set of occupations than computer and mathematical occupations, though there is substantial overlap between the two designations and the two rates are almost identical. (See Appendix.)

RESTRICTIVE MEASURES AGAINST H-1B VISA HOLDERS

There is one active, recently-imposed restriction on H-1B visa holders and two published final regulations that would have a significant negative impact on many employers and high-skilled foreign nationals. In addition, there are a myriad of existing restrictions on H-1B visas that include dictating how much an employer must pay an H-1B visa holder, rules governing work at third-party locations and a strict annual limit of only 65,000 new H-1B petitions for companies, with an exemption of 20,000 for foreign nationals with an advanced degree from a U.S. university. The annual limit of 85,000 new H-1B petitions comes to 0.05% of the U.S. civilian labor force.

First, on February 24, 2021, President Joe Biden revoked a Trump administration proclamation issued on April 22, 2020, that had suspended the entry of immigrants in the Diversity visa, employment and family categories. However, the Biden administration did not revoke a proclamation issued on June 22, 2020, that suspended the entry of H-1B and other visa holders. Donald Trump had extended both proclamations until March 31, 2021.

On October 1, 2020, U.S. District Judge Jeffrey S. White issued an order in *NAM v. DHS* that found in favor of the plaintiffs, meaning the suspension on entry could not be used against members of the National Association of Manufacturers, U.S. Chamber of Commerce and others belonging to the plaintiffs organizations.

Judge White referenced a June 2020 National Foundation for American Policy (NFAP) analysis that presented economic data showing the pandemic had not harmed individuals in most technology-related jobs but in jobs in travel, entertainment and restaurants. Between January and May 2020, the U.S. unemployment rate in computer occupations had actually declined from 3.0% to 2.5%, which was information available when the administration issued the June 2020 proclamation.[8]

[6] Unemployment rate for computer and mathematical occupations: https://www.bls.gov/web/empsit/cpseea30.htm. BLS data on occupations are not seasonally adjusted.
[7] The Employment Situation—Febuary 2021, News Release, Bureau of Labor Statistics, March 5, 2021.
[8] *NAM v. DHS*, U.S. District Court, Northern District of California, Case No. 20-cv-04887-JSW, preliminary injunction signed on October 1, 2020.

The issue of job vacancies also figured in the opinion. Judge White wrote, "The statistics regarding pandemic-related unemployment actually indicate that unemployment is concentrated in service occupations and that *a large number of job vacancies remain in the area most affected by the ban, computer operations which require high-skilled workers*." (Emphasis added.)[9]

That statement referred to data from an NFAP report that found hundreds of thousands of active job vacancy postings online for jobs in common computer occupations, including those most common to H-1B visa holders.[10]

As noted, U.S. District Judge Jeffrey S. White cited job vacancies in the NFAP report when he issued a preliminary injunction in the *NAM v. DHS* case. As of March 5, 2021, the number of active job vacancy postings in the same computer occupations had increased by 30%.

In sum, there was no justification for the original proclamation of June 22, 2020, and the economic case has grown weaker in the ensuing months.

A second important restriction is a final Department of Labor (DOL) rule published by the Trump administration on January 14, 2021. Three courts blocked an "interim final" rule and the final rule was modified from the original but still retains the goal of pricing out of the U.S. labor market employment-based immigrants and H-1B visa holders. "The revisions to the rule don't change the fact that it still fails to do what the law requires—to reflect the actual, prevailing wage for workers in that geographical area doing similar work," said Kevin Miner, a partner at Fragomen.[11]

An NFAP analysis found the DOL regulation would boost required wages for employment-based immigrants and H-1B visa holders by 23% to 41% depending on the occupation. Individuals who must gain extensions while waiting in H-1B status for their employment-based green card could find an employer no longer able to retain them in the U.S. because the new salary required by the Department of Labor is far above the market wage. Numerous studies and private wage surveys show high-skilled foreign nationals are paid the same or higher than comparable U.S. professionals.[12]

[9] Ibid.
[10] *Updated Analysis of Employment Data for Computer Occupations*, NFAP Policy Brief, National Foundation for American Policy, June 2021.
[11] Stuart Anderson, "Trump DOL Wage Rule Remains Threat To H-1B Visas And Immigrants," *Forbes*, February 17, 2021.
[12] Ibid.

The Biden administration delayed the effective date of the rule, and has suggested it may ask for more information or formal comments from the public. The rule was championed by Trump White House adviser Stephen Miller and has been applauded by the nation's leading anti-immigration group.

A third restriction, which appears to have support in the Biden administration, is Trump's final regulation to eliminate the H-1B lottery and instead award H-1B petitions from highest to lowest salary. Many attorneys consider the rule to be unlawful. The rule is likely to result in many international students and other young people being unable to obtain an H-1B petition, while favoring senior employees who typically demand higher salaries because of their years of work experience. Startups and smaller companies would likely also be placed at a disadvantage. The rule has been delayed.

The Biden administration has asserted that attracting and retaining international students is in America's strategic influence, even though these two regulations would likely do much more harm than any positive administrative initiative the administration could undertake toward achieving that goal. The ability to work in the United States after graduation is crucial for many international students.

"We will expand our science and technology workforce by investing in STEM education, where America is currently losing ground, and restoring our nation's historic strengths by ensuring our immigration policy incentivizes the world's best and brightest to study, work, and stay in America," according to the Biden administration's *Interim National Security Guidance*, released in March 2021.

In addition to the economic data presented in this NFAP analysis, economic research shows new restrictions on H-1B visas are harmful and unnecessary.

A study by economists Giovanni Peri, Kevin Shih, Chad Sparber and Angie Marek Zeitlin examined the last recession and found that denying the entry of H-1B visa holders due to the annual limits harmed job growth for U.S.-born professionals. "The number of jobs for U.S.-born workers in computer-related industries would have grown at least 55% faster between 2005-2006 and 2009-2010, if not for the denial of so many applications in the recent H-1B visa lotteries," concluded the economists.[13]

Research by Britta Glennon, an assistant professor at the Wharton School of Business at the University of Pennsylvania, found new restrictions on H-1B visas are likely to push jobs out of the United States, concluding,

[13] Giovanni Peri, Kevin Shih, Chad Sparber and Angie Marek Zeitlin (June 2014), *Closing Economic Windows: How H-1B Visa Denials Cost U.S.-Born Tech Workers Jobs and Wages During the Great Recession*, Partnership for a New American Economy.

"[A]ny policies that are motivated by concerns about the loss of native jobs should consider that policies aimed at reducing immigration have the unintended consequence of encouraging firms to offshore jobs abroad."[14]

CONCLUSION

There are over 1 million active job vacancy postings in computer occupations in the United States as of March 7, 2021. That is close to 20 times the number of new H-1B petitions awarded in computer occupations in a typical year. There is not a fixed number of jobs in the economy or even within certain sectors of the economy, so a new entrant in the labor market—whether a native-born college student or a foreign-born individual in H-1B status—does not need to take a job from an incumbent worker. High-skilled workers can create additional jobs for people with complementary skills. Research by economists Giovanni Peri, Britta Glennon and others have concluded that restrictions on H-1B visas are counterproductive.

"H-1B visa holders do not adversely affect U.S. workers," according to a May 2020 National Foundation for American Policy study by Madeline Zavodny, formerly an economist at the Federal Reserve Bank of Atlanta (and Dallas) and a professor of economics at the University of North Florida (UNF) in Jacksonville. "On the contrary, the evidence points to the presence of H-1B visa holders being associated with lower unemployment rates and faster earnings growth among college graduates, including recent college graduates. Further, the results suggest that, if anything, being in a field with more H-1B visa holders makes it more likely that U.S.-born young college graduates work in a job closely related to their college major. The results here should give pause to policymakers considering imposing additional restrictions on the H-1B program. There is little reason to think doing so will help American workers."[15]

[14] Britta Glennon, *How Do Restrictions on High-Skilled Immigration Affect Offshoring? Evidence from the H-1B Program*, Carnegie Mellon University, May 2019.
[15] Madeline Zavodny, *The Impact of H-1B Visa Holders on the U.S. Workforce*, NFAP Policy Brief, National Foundation for American Policy, May 2020. Another study by Madeline Zavodny also addresses the issue of unemployment. "There is no evidence that foreign students participating in the OPT [Optional Practical Training] program reduce job opportunities for U.S. workers. Instead, the evidence suggests that U.S. employers are more likely to turn to foreign student workers when U.S. workers are scarcer," according to Zavodny. The study also found, "The relative number of foreign students approved for OPT is negatively related to various measures of the unemployment rate among U.S. STEM workers. A larger number of foreign students approved for OPT, relative to the number of U.S. workers, is associated with a lower unemployment rate among those U.S. workers." Madeline Zavodny, *International Students, STEM OPT and the U.S. Workforce*, NFAP Policy Brief, National Foundation for American Policy, March 2019.

Appendix – A Note on Methodology

The analysis on computer occupations from the National Foundation for American Policy (NFAP) focused only on computer occupations in the Bureau of Labor Statistics (BLS) data and listed which occupations were examined in the analysis. The analysis tracked the same occupations for all of 2020. The computer occupations selected matched those as best as possible with the occupations in *Characteristics of H-1B Specialty Occupation Workers Fiscal Year 2019 Annual Report to Congress October 1, 2018 – September 30, 2019*, published by U.S. Citizenship and Immigration Services.

Each month the Bureau of Labor Statistics calculates its estimates of unemployment rates using the Current Population Survey (CPS), a monthly survey of about 120,000 individuals in 60,000 households. Each month, shortly after releasing its own data tables, BLS makes a public use data file available of individual CPS survey responses so that others can both replicate BLS's numbers and perform analyses beyond BLS's own monthly tables.

NFAP's calculations of the unemployment rate in computer occupations are made using the monthly CPS public use files using the same individual sample weights as BLS and applying the same formula that BLS uses to calculate its own estimates of unemployment.

BLS publishes an unemployment rate for "computer and mathematical occupations." The National Foundation for American Policy's estimates of unemployment rates in "computer occupations" differs from BLS's estimates for "computer and mathematical occupations" in only two ways. First, NFAP includes several clear computer occupations that BLS excludes: computer and information systems manager, computer hardware engineer and electrical and electronics engineers. Second, NFAP excludes the mathematical occupations: actuaries, operations research analysts, statisticians and "other mathematical occupations." (About 80% of the workers in NFAP's "computer occupations" are also in BLS's "computer and mathematical occupations.")

MISLEADING DHS REFERENCE TO UNEMPLOYMENT RATE IN SECTORS

It is not valid to use the unemployment rate in the Information sector and the Professional and Business Services sector to justify the "good cause" exception to the Administrative Procedure Act to restrict H-1B visas, as DHS did in its rule, since only approximately 10% of the jobs (computer occupations with a B.S. or higher) in these sectors are in occupations similar to professionals in the H-1B category. The DHS rule contained a misleading reference to the unemployment rates in the Information sector and the Professional and Business Services sector to justify the "good cause" exception to the Administrative Procedure Act.[16]

A major problem with using the unemployment rates in broad industry sectors is those rates measure unemployment among *all employees in entire companies* in those sectors, *not specific occupations*, particularly not those occupations in which H-1B visa holders normally work. This lack of precision is understandable, since BLS attempts to divide businesses into 12 broad non-agricultural sectors for statistical purposes.[17]

Table 3
Education Level and Computer Occupations in Information & Professional and Business Services Sectors

Category	Information Sector	Professional and Business Services Sector
Percent of Workers With Less Than A Bachelor's Degree	43.5%	45.3%
Percent of Workers in a Computer Occupation with a B.S. or Higher	10.3%	9.8%

Source: Bureau of Labor Statistics, National Foundation for American Policy.

Approximately 90% of the jobs in these two sectors cited in the DHS rule are not similar to the types of jobs for which companies employ H-1B visa holders (computer occupations with a B.S. or higher). Over 40% of the individuals working in the Information sector and the Professional and Business Services sector have less than an undergraduate degree. (See Table 3.) Two of the top 5 jobs in these sectors are janitors and landscaping and groundskeeping workers. The other three of the top 5 jobs in the sectors are managers, software developers and lawyers.[18] (See Table 4.)

[16] "Strengthening the H–1B Nonimmigrant Visa Classification Program," Department of Homeland Security, 8 CFR Part 214, page 63939.
[17] https://www.bls.gov/news.release/empsit.t14.htm.
[18] Bureau of Labor Statistics.

Table 4
Top 5 Occupations in Information & Professional and Business Services Sectors

Occupation	Percent of Workers in Combined Sectors
Managers	7.5%
Software Developers	5.0%
Landscaping and Groundskeeping Workers	4.3%
Lawyers	4.0%
Janitors	3.9%

Source: Bureau of Labor Statistics, National Foundation for American Policy.

The two sectors cited by DHS in its rule include many types of businesses that employ few H-1B visa holders and are too diverse to be reliable indicators of the employment situation for individuals who work primarily in computer-related fields. The Professional and Business Services sector includes landscaping services, waste management and remediation services, travel arrangements and reservations, legal services, accounting and advertising. The Information sector includes newspaper publishers, radio and television broadcasting, book publishers and libraries. (See Appendix for complete list.)[19]

While companies in the Information sector and the Professional and Business Services sector include some employees with similar skills and occupations as professionals in the H-1B category (about 10%), they employ many more people who work in sales, retail, administrative, managerial and other jobs for the companies. If the Bureau of Labor Statistics measured Major League baseball teams in 2020, it would find the unemployment rate among those teams in that "sector" increased because teams laid off ushers, ticket sales representatives, hot dog vendors and cashiers since no fans were permitted in stadiums that season for health reasons. However, the number of baseball players – the specialized positions – did not decline on Major League teams. In fact, rosters expanded from 25 to 28 players during the shortened 2020 baseball season.

[19] BLS uses the Census Industrial Classification: https://www2.census.gov/programs-surveys/demo/guidance/industry-occupation/census-2012-final-code-list.xls.

2012 Census Industrial Classification Used by the Bureau of Labor Statistics[20]

Information

Newspaper publishers
Periodical, book, and directory publishers
Software publishers
Motion pictures and video industries
Sound recording industries
Radio and television broadcasting and cable subscription programming
Internet publishing and broadcasting and web search portals
Wired telecommunications carriers
Other telecommunications services
Data processing, hosting, and related services
Libraries and archives
Other information services

Professional and Business Services

Professional and technical services

Legal services
Accounting, tax preparation, bookkeeping, and payroll services
Architectural, engineering, and related services
Specialized design services
Computer systems design and related services
Management, scientific, and technical consulting services
Scientific research and development services
Advertising, public relations, and related services
Veterinary services

[20] Ibid.

Other professional, scientific, and technical services

Management, administrative, and waste services

Management of companies and enterprises

Employment services

Business support services

Travel arrangements and reservation services

Investigation and security services

Services to buildings and dwellings

Landscaping services

Other administrative and other support services

Waste management and remediation services

HISTORICAL UNEMPLOYMENT RATE IN COMPUTER AND MATH OCCUPATIONS

When publishing rules as "interim final" in October 2020, DOL and DHS argued the unemployment rate signified an emergency requiring a "good cause" exception to the rulemaking process. However, the unemployment rate for computer and mathematical occupations in 2020 reached as high as 4.6% in only one month (August 2020), but the 4.6% unemployment rate in those occupations has been exceeded in 51 individual months since 2000 and DOL never cited it before to justify a regulation changing H-1B prevailing wage rates, including as an interim final rule.

Table 5
U.S. Unemployment Rate in Computer and Mathematical Occupations: 2000-2021

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	2.5	2.3	2.1	1.9	2.3	1.7	2.1	1.8	1.9	2.9	2.5	2.4
2001	2.5	2.9	2.7	2.2	2.9	3.4	3.2	4.7	5.3	4.7	5.0	3.8
2002	4.9	4.5	4.1	4.8	5.7	5.7	4.4	4.7	4.9	4.8	5.0	5.1
2003	5.6	5.7	6.5	6.0	5.3	5.0	5.6	5.2	5.5	5.3	4.6	5.1
2004	6.0	5.7	5.6	5.1	4.5	4.0	3.6	2.9	3.3	3.3	3.1	3.0
2005	3.5	3.8	3.8	3.6	4.0	2.8	2.6	2.0	2.0	2.5	2.0	1.9
2006	2.2	2.2	2.9	2.3	2.7	2.5	2.3	2.0	2.5	2.6	2.4	2.4
2007	2.6	2.0	1.9	1.4	2.1	1.9	2.5	2.1	2.2	2.8	1.7	2.5
2008	2.5	2.8	2.5	2.2	2.3	1.9	2.2	2.2	2.6	3.5	3.0	3.4
2009	4.8	5.4	5.7	5.6	4.9	5.4	5.6	5.6	6.2	4.6	4.2	4.5
2010	5.9	5.9	6.5	5.3	5.5	5.1	4.7	4.3	4.3	4.8	5.2	5.3
2011	5.3	4.7	4.0	3.7	3.8	3.3	4.7	3.7	4.2	4.6	4.1	3.6
2012	3.8	4.9	4.6	4.3	3.5	3.1	3.1	3.4	3.5	3.2	2.8	3.8
2013	3.9	3.5	3.2	3.0	3.5	4.2	3.8	3.3	4.5	3.6	3.3	3.7
2014	2.3	2.9	2.8	2.8	2.6	3.6	2.3	3.1	2.8	3.0	2.0	2.4
2015	2.5	2.4	2.0	1.9	1.5	2.5	3.4	2.9	2.8	2.8	3.4	2.6
2016	2.4	2.5	2.4	2.0	2.0	2.2	2.9	2.4	3.0	3.1	2.9	2.6
2017	2.8	2.7	2.1	2.5	1.9	2.3	2.1	2.4	2.8	2.5	2.5	2.4
2018	2.8	2.5	1.4	1.7	2.3	1.9	1.9	2.5	2.0	2.1	2.4	2.1
2019	2.4	2.3	1.6	2.4	1.3	1.5	1.3	1.5	2.4	2.2	2.4	2.3
2020	3.0	2.4	2.4	4.3	3.7	4.3	4.4	4.6	3.5	2.8	2.4	3.0
2021	2.4	2.4										

Source: Bureau of Labor Statistics. Numbers represent percentages.

In 2001, the unemployment rate in computer and mathematical occupations was between 4.7% and 5.3% in August through November. From April 2002 through April 2004, a span of two years, a 4.6% unemployment rate in computer and mathematical occupations was exceeded in 23 of the 25 months. In 2009, from January through September, the unemployment rate in computer and mathematical occupations was higher than 4.6% for 9 consecutive months. In 2010, from January through July, the unemployment rate in computer and mathematical occupations exceeded 4.6% for 7 consecutive months. From October 2010 through February 2011, for 5 consecutive months, the unemployment rate in computer and mathematical occupations was higher than 4.6%. (See Table 5 above.)

ABOUT THE NATIONAL FOUNDATION FOR AMERICAN POLICY

Established in 2003, the National Foundation for American Policy (NFAP) is a 501(c)(3) non-profit, non-partisan public policy research organization based in Arlington, Virginia, focusing on trade, immigration and related issues. Advisory Board members include Columbia University economist Jagdish Bhagwati, Cornell Law School professor Stephen W. Yale-Loehr, Ohio University economist Richard Vedder and former INS Commissioner James Ziglar. Over the past 24 months, NFAP's research has been written about in the *Wall Street Journal*, the *New York Times*, the *Washington Post*, and other major media outlets. The organization's reports can be found at www.nfap.com. Twitter: **@NFAPResearch**