

NATIONAL FOUNDATION FOR AMERICAN POLICY
 NFAP POLICY BRIEF » SEPTEMBER 2021

**UPDATED EMPLOYMENT DATA FOR COMPUTER
 OCCUPATIONS, SEPTEMBER 2021**

EXECUTIVE SUMMARY

There are more than 1.2 million unique active job vacancy postings in computer occupations in the United States as of September 6, 2021, up 15% from 6 months earlier, according to an analysis by the National Foundation for American Policy (NFAP). The analysis is based on data from Emsi Job Posting Analytics, and NFAP has determined there are likely many more job openings than publicly posted positions in the Emsi database. 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 more than 20 times as many job vacancy postings in computer occupations today as new H-1B petitions typically used by companies in computer occupations each year. Amazon had at least 20,000 job vacancy postings in computer occupations as of September 6, 2021, Accenture had more than 19,000 and Apple had at least 5,700. Companies have an ongoing need for more highly skilled professionals to grow, and an insufficient number of available workers slows growth in the U.S. economy. The U.S. unemployment rate in computer and mathematical occupations is 1.5% (August 2021), half the rate of 3.0% in January 2020, before the start of the pandemic.

**Table 1
 Active Job Vacancy Postings in Computer Occupations**

Occupations	Active Job Vacancy Postings (August 7 to September 6, 2021)	Change from 6 months Earlier (February 8 to March 7, 2021)
Software Developer and Software Quality Assurance Analyst and Tester	435,639	+13%
Computer Occupations, All Other	243,217	+20%
Network and Computer System Administrator	112,990	+10%
Computer Systems Analyst	110,134	+8%
Computer and Information Systems Manager	81,472	+17%
Information Security Analyst	76,126	+19%
Electrical Engineer	47,181	+21%
Computer Programmer	29,338	+11%
Computer and Information Research Scientist	26,030	+16%
Database Administrator & Architects	17,641	+2%
Electronics Engineer (except computer)	17,783	+15%
Computer Hardware Engineer	12,485	+22%
Computer Network Architect	8,909	+24%
TOTAL	1,218,945	+15%

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," August 7 to September 6, 2021 and February 8, 2021 to March 7, 2021.

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The postings in computer occupations include 435,639 active job vacancy postings for software developers and software quality assurance analysts and testers, 112,990 for network and computer system administrators, 110,134 for computer systems analysts, 76,126 for information security analysts and 47,181 for electrical engineers.

The data point to a significant talent gap in the United States between the demand for high-skilled technical labor and the ability of the U.S. labor force to fill that demand. “At U.S. universities, foreign nationals account for 82% of the full-time graduate students in petroleum engineering, 74% in electrical engineering and 72% in computer and information sciences,” according to an [NFAP analysis](#) of data from the National Science Foundation.

Lack of access to H-1B visas and long waits for employment-based green cards have [discouraged international students from coming to the United States](#) in recent years.

“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.”

UNIQUE ACTIVE JOB VACANCY POSTINGS IN COMPUTER OCCUPATIONS

An indicator of the strong demand for technical talent is that as of September 6, 2021, there were 1,218,945 unique active job vacancy postings online in the previous 30-day period for jobs in the most common computer occupations in the U.S. that typically require at least a bachelor's degree, according to a National Foundation for American Policy analysis of data from Emsi Job Posting Analytics.¹ That represents a 15% increase compared to 6 months earlier (February 8, 2021 to March 7, 2021) for the number of active vacancy postings in the most common computer occupations. All 13 categories of computer occupations showed an increase, in some cases significant increases, in active job vacancy postings compared to 6 months earlier. Eleven of the 13 categories showed increases of 10% or more from 6 months ago, four categories showed increases of more than 20% from 6 months earlier. (See Table 1.)

Examining specific companies, Amazon had at least 20,000 job vacancy postings in computer occupations as of September 6, 2021, Accenture had more than 19,000 and Apple had at least 5,700. (These are all unique postings.) It is likely the numbers derived from the Emsi database are conservative snapshots of the demand for highly skilled technical labor, based on NFAP checking the vacancy openings against internal data provided by selected companies. Companies that are among the top recipients of H-1B petitions in FY 2020 also had many job vacancy postings for high-skilled positions in non-computer occupations, including management analysts, operations managers, marketing managers and others.

“Computer jobs were already fast-growing before the pandemic, but it is still remarkable to see now a 15% increase in job postings from 6 months ago, after an 11% increase from the previous 12-month period,” 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 postings in computer occupations include 435,639 active job vacancy postings for software developers and software quality assurance analysts and testers, 112,990 for network and computer system administrators, 110,134 for computer systems analysts, 76,126 for information security analysts and 47,181 for electrical engineers. “All job posting counts reflect unique postings that were active during the indicated time frame,” which was August 7 to September 6, 2021.² These occupations track those eligible for H-1B visas, according to DHS and BLS data.

¹ See <https://www.economicmodeling.com/job-posting-dashboard/>.

² Ibid.

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The 13 occupational categories covered by this analysis are similar but not identical to the ones NFAP has tracked over the past 18 months. 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.

To put the more than 1.2 million active job vacancy postings in computer occupations in perspective, companies can file for only 85,000 new H-1B petitions in a year—and 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 more than 20 times more job vacancy postings in computer occupations as new H-1B petitions typically used by companies in computer occupations each year, even if one adopted a zero-sum approach to jobs. As noted, 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.

**Table 2
U.S. Unemployment Rate in Computer Occupations**

OCCUPATIONS	JANUARY 2020	AUGUST 2021
Computer and Mathematical Occupations	3.0%	1.5%

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

“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 U.S. unemployment rate in computer and mathematical occupations was 1.5% in August 2021, declining from a 3.0% unemployment rate in computer occupations in January 2020, before the start of the pandemic, according to the Bureau of Labor Statistics (BLS).⁵ The computer occupations in the BLS data track those listed in the H-1B “characteristics report” for FY 2019 published by U.S. Citizenship and Immigration Services. (See Appendix.)

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 Unemployment rate for computer and mathematical occupations: <https://www.bls.gov/web/empsit/cpseea30.htm>. BLS data on occupations are not seasonally adjusted.

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RESTRICTIVE MEASURES AGAINST H-1B VISA HOLDERS

Even though there are more than 1 million active job vacancy postings in computer occupations, critics of H-1B visa holders continue to argue—despite all the evidence to the contrary—that high-skilled foreign nationals are preventing U.S. professionals from obtaining jobs in the United States.

Table 3
H-1B Annual Limit and H-1B Registrations as Indicator of Demand

H-1B Annual Limit for Companies	March 2021 Registrations for H-1B Petitions for FY 2022	Number of Registrations in Excess of Annual Limit in March/April 2021
85,000	308,613	+223,613

Source: National Foundation for American Policy, USCIS. The figure 308,613 was the number of registrations reported by USCIS.

Restrictions on employing high-skilled foreign nationals remain significant. In March 2021, employers [filed 308,613 H-1B registrations](#) for cap selection for FY 2022 for only 85,000 H-1B petitions (65,000 plus a 20,000-exemption for individuals with an advanced degree from a U.S. university). (See this [NFAP analysis](#) of FY 2021 H-1B data.) That means over 72% of H-1B registrations for high-skilled foreign nationals were rejected even before an adjudicator evaluated the application.⁶ That does not include demand that may arise during the year or employers discouraged from registering by the low odds of obtaining an approval. The annual limit of 85,000 new H-1B petitions comes to 0.05% of the U.S. civilian labor force.

There are many 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, as noted, 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.

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 on the legality of President Donald Trump's June 2020 proclamation suspending the entry of H-1B and other visa holders. The ruling meant the proclamation could not be used against members of the National Association of Manufacturers, U.S. Chamber of Commerce and others belonging to the plaintiffs' organizations.

⁶ That is separate from policies during the Trump administration that [courts](#) found to be [unlawful](#) and which resulted in [denial rates for H-1B petitions](#) for initial employment as high as 24% in FY 2018. *H-1B Denial Rates for FY 2020 and the Impact of Court Decisions*, NFAP Policy Brief, National Foundation for American Policy, January 2021.

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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 a proclamation on June 22, 2020.⁷

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.)⁸

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.⁹

Another important restriction was 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 retained 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.¹⁰

In June 2021, a federal judge ended the Trump administration’s Department of Labor [rule](#) that would have significantly increased the minimum salary employers would be required to pay to H-1B visa holders and employment-based immigrants.

An [NFAP analysis](#) found the DOL regulation would have boosted 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 have found 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.¹¹

⁷ *NAM v. DHS*, U.S. District Court, Northern District of California, Case No. 20-cv-04887-JSW, preliminary injunction signed on October 1, 2020.

⁸ *Ibid.*

⁹ *Updated Analysis of Employment Data for Computer Occupations*, NFAP Policy Brief, National Foundation for American Policy, June 2021.

¹⁰ Stuart Anderson, “Trump DOL Wage Rule Remains Threat To H-1B Visas And Immigrants,” *Forbes*, February 17, 2021.

¹¹ *Ibid.*

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The Biden administration [delayed the effective date of the rule](#), and asked for more information from the public. The rule was championed by Trump White House adviser Stephen Miller and was [applauded](#) by the nation's leading anti-immigration group. On December 1, 2020, a federal judge had [vacated](#) the earlier version of the [DOL rule and a DHS regulation](#) designed to restrict H-1B visa holders.

Another H-1B restriction, which appears to have support in the Biden administration, was 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. A National Foundation for American Policy [analysis](#) found 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.

In an [order](#) on September 15, 2021, Judge Jeffrey S. White agreed with plaintiffs that the regulation was issued in an unlawful manner. "Judge White invalidated the regulation on the grounds that then-Acting DHS Secretary Chad Wolf was not lawfully serving in his role at the time the agency promulgated the cap selection regulation," explained the [Fragomen law firm](#). "He did not address the plaintiffs' argument that DHS does not have the authority to allocate the H-1B quota according to wage level or other criteria."

"USCIS [U.S. Citizenship and Immigration Services] cannot implement the rule as planned on Dec. 31, in time for FY23 H-1B cap season," according to [Berry Appleman and Leiden](#). "Petitioning employers will *not* need to provide a wage level on the H-1B registration and USCIS will select registrations randomly as it has in the past. . . . When President Biden took office, DHS could have 'ratified' the rule to make it easier to defend in court. DHS chose not to do that. Though the agency could certainly restart the regulatory process to create a wage-based H-1B allocation process, that is unlikely to happen before the next cap season."

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.

CONCLUSION

There are over 1.2 million active job vacancy postings in computer occupations in the United States as of September 6, 2021. That is more than 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 and new measures against employing H-1B visa holders 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.¹²

[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, “[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.”¹³

“H-1B visa holders do not adversely affect U.S. workers,” according to a May 2020 National Foundation for American Policy study by economist Madeline Zavodny. “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.”¹⁴

¹² 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.

¹³ Britta Glennon, *How Do Restrictions on High-Skilled Immigration Affect Offshoring? Evidence from the H-1B Program*, Carnegie Mellon University, May 2019.

¹⁴ 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.

Appendix

MISLEADING DHS REFERENCE TO UNEMPLOYMENT RATE IN SECTORS

It was not valid for the Trump administration 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 H-1B 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.¹⁵

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.¹⁶

Table 4
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

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.

¹⁵ “Strengthening the H-1B Nonimmigrant Visa Classification Program,” Department of Homeland Security, 8 CFR Part 214, page 63939.

¹⁶ <https://www.bls.gov/news.release/empsit.t14.htm>.

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individuals working in the Information sector and the Professional and Business Services sector have less than an undergraduate degree. (See Table 4.) 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.¹⁷ (See Table 5.)

Table 5
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.)¹⁸

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.

¹⁷ Bureau of Labor Statistics.

¹⁸ 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 Statistics¹⁹**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

¹⁹ Ibid.

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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

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HISTORICAL UNEMPLOYMENT RATE IN COMPUTER AND MATH OCCUPATIONS

When publishing rules as “interim final” in October 2020, DOL and DHS under the Trump administration 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 more than 50 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 6
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	1.9	2.5	2.4	2.2	1.5	1.5				

Source: Bureau of Labor Statistics. Numbers represent percentages.

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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 6.)

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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.

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