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Artificial Intelligence and the Labor Market:  
A Scenario-Based Approach

Remarks by

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Thank you for the opportunity to speak to you today.<sup>1</sup> In my remarks, I would like to address a key question facing economists, policymakers, and people all over the world: How will artificial intelligence, particularly generative artificial intelligence, or GenAI, affect workers and the labor market in the years ahead?

Before I turn to that issue, I'd like to touch on a topic that I expect is also of interest: the outlook for the U.S. economy and the implications for monetary policy.

The U.S. economy entered this quarter in a relatively strong position: The unemployment rate has been low and stable, and the disinflationary process has continued on a gradual, albeit uneven, path towards our 2 percent objective. Private domestic final purchases have been solid. Overall, the economy has been resilient.

Against that backdrop, the outlook has been clouded by trade policies that have led to an increase in uncertainty, contributing to declines in measures of consumer and business sentiment. I expect tariffs to lead to higher inflation in the United States and lower growth both in the United States and abroad starting later this year.

In my view, higher tariffs could lead to disruption to global supply chains and create persistent upward pressure on inflation. Faced with substantial tariffs, businesses will likely change how they source intermediate inputs, and it will take time and investment for them to reroute their distribution networks. Conversely, global trade networks may change rapidly, and some suppliers may not be able to adapt quickly enough to survive these changes. This concern is particularly acute for small businesses, which are less diversified, less able to access credit, and hence more vulnerable to adverse shocks. Small businesses play a vital role in production networks, often

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<sup>1</sup> The views expressed here are my own and are not necessarily those of my colleagues on the Federal Reserve Board or the Federal Open Market Committee.

providing specialized inputs that can't easily be sourced elsewhere, and business failures could further disrupt supply chains. As we saw during the pandemic, such disruptions can have large and lasting effects on prices, as well as output.

I am equally concerned that tariffs will lead to higher unemployment as the economy slows. Thus, the FOMC may be in a difficult position if we were to see both rising inflation and rising unemployment.

The size and scope of the recent tariff increases are without modern precedent, we don't know their final form, and it is too soon to know how they will affect the economy. Yet given the economy's strong starting point and the progress we have made in bringing inflation back toward our 2 percent objective, monetary policy is in a good position to adjust as conditions unfold. Meanwhile, we will also be closely monitoring how technologies like artificial intelligence are being integrated into economic activity and analyzing the implications for how the economy will evolve.

Let me now return to the longer-term question of how AI will affect the labor market. Debate about machines replacing workers is nothing new, and even artificial intelligence is not particularly new either. AI has, in some form, arguably been around for decades. Computer scientists have been developing machine learning algorithms for many years, and these algorithms have been widely used in commercial applications, such as fraud detection and advertising. Speech and facial recognition are already ubiquitous. These more long-standing forms of AI are continuing to improve, driving progress in domains ranging from finance to medical diagnosis, and becoming so deeply embedded in our daily lives that we scarcely notice them anymore.

But GenAI promises to go much further. Unlike traditional machine learning techniques, which often focus on relatively simple prediction and classification tasks, the large language models that have emerged in recent years can generate new content—anything from news articles to computer code to images and video to customer service dialogue. Emerging forms of “agentic” AI can undertake complex, multistep tasks—for example, taking a customer through a transaction and then placing an automated order. As AI continues to develop, it will increasingly be combined with physical technologies like autonomous vehicles and advanced robotics, further extending its ability to interact with the real world. And AI may be shaping up to become what the esteemed economist Zvi Griliches called an “invention of a method of inventing” that speeds up the research and development process itself.<sup>2</sup>

Growing evidence indicates that AI will be a “general purpose technology”—such as railroads, electricity, or computers—which is characterized by widespread adoption, complementary progress in many downstream applications, and ongoing improvement in the core technology.<sup>3</sup> Past general purpose technologies have dramatically improved productivity. So, against this background, the natural question is, what about AI?

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<sup>2</sup> See page 502 in Zvi Griliches (1957), “Hybrid Corn: An Exploration in the Economics of Technological Change,” *Econometrica*, vol. 25 (October), pp. 501–22. See also Iain M. Cockburn, Rebecca Henderson, and Scott Stern (2019), “The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis,” in Ajay Agrawal, Joshua Gans, and Avi Goldfarb, eds., *The Economics of Artificial Intelligence: An Agenda* (Chicago: University of Chicago Press), pp. 115–48, and Martin Neil Baily, David M. Byrne, Aidan T. Kane, and Paul E. Soto (forthcoming), “Generative AI at the Crossroads: Light Bulb, Dynamo, or Microscope,” Brookings Institution working paper.

<sup>3</sup> The term “general purpose technology” is typically abbreviated to GPT. To avoid confusion with ChatGPT, I will continue to use the longer term. For a definition and discussion of past general purpose technologies, see Timothy F. Bresnahan and Manuel Trajtenberg (1995), “General Purpose Technologies ‘Engines of Growth’?” *Journal of Econometrics*, vol. 65 (January), pp. 83–108. For a discussion of whether earlier AI techniques already meet these criteria, see Avi Goldfarb, Bledi Taska, and Florenta Teodoridis (2023), “Could Machine Learning Be a General Purpose Technology? A Comparison of Emerging Technologies Using Data from Online Job Postings,” *Research Policy*, vol. 52 (January), 104653. For a discussion of GenAI specifically, see Tyna Eloundou, Sam Manning, Pamela Mishkin, and

In trying to understand how AI might transform work, it's useful to consider how it could be applied in individual occupations, each of which comprises a range of tasks that vary in their susceptibility to automation. Like past waves of information technology, AI will substitute for human labor in some tasks, complement human labor in other tasks, and spur the creation of new tasks that humans will perform, at least initially.<sup>4</sup> The net effects of AI on employment, both in the aggregate and across demographic and education groups, will depend on the relative size of these offsetting effects.

A pessimistic view is that AI and robotics could become so capable and cost effective as to render most human labor obsolete, culminating in mass unemployment. Such concerns about technological advances are hardly a novel development. At least since the Luddites of the early 19th century tried to disable textile looms, people have feared that machines would bring about steep declines in employment, wages, and human welfare.<sup>5</sup>

Economists have long been skeptical of that view, which suffers from the “lump of labor fallacy”—the presumption that there’s a fixed amount of work to be done, so if

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Daniel Rock (2023), “GPTs Are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models,” March 17 (revised August 22), <https://arxiv.org/pdf/2303.10130>. For a contrasting view that AI will have only modest effects on productivity over the next 10 years, see Daron Acemoglu (2025), “The Simple Macroeconomics of AI,” *Economic Policy*, vol. 40 (January), pp. 13–58.

<sup>4</sup> See Daron Acemoglu and Pascual Restrepo (2019), “Automation and New Tasks: How Technology Displaces and Reinstates Labor,” *Journal of Economic Perspectives*, vol. 33 (Spring), pp. 3–30.

<sup>5</sup> As David Autor writes, “There have been periodic warnings in the last two centuries that automation and new technology were going to wipe out large numbers of middle class jobs. The best-known early example is the Luddite movement of the early 19th century, in which a group of English textile artisans protested the automation of textile production by seeking to destroy some of the machines.” See page 3 in David H. Autor (2015), “Why Are There Still So Many Jobs? The History and Future of Workplace Automation,” *Journal of Economic Perspectives*, vol. 29 (Summer), pp. 3–30.

machines do it, humans will not.<sup>6</sup> New technologies do eliminate some existing occupations, and not all workers benefit from technological change. But technology also creates new occupations, and the many waves of technological advances over the centuries haven't rendered humans obsolete. For example, many of the tasks that were performed by humans in the 1950s are now performed by computers and robots, and yet the unemployment rate is similar to what it was back then, while the labor force participation rate is higher overall.

However, the amazing potential capabilities and breadth of applications associated with AI—many of which are already apparent—make it worth asking whether this time may be different. AI holds enormous promise of faster economic growth, advances in human health, and a higher standard of living. But alongside the kinds of labor market disruptions seen in past episodes of revolutionary technological change, we will need to consider the possibility of more sweeping changes in the way we work.

### **A Scenario Approach**

In a previous speech, I outlined two hypothetical scenarios describing how AI could evolve.<sup>7</sup> In the first scenario, we see only incremental adoption that primarily augments what humans do today but still leads to significant and widespread productivity

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<sup>6</sup> For example, see textbook discussions of automation and unemployment by Paul A. Samuelson (1964), *Economics: An Introductory Analysis*, 6th ed. (New York: McGraw-Hill), pp. 333–37; and James D. Gwartney and Richard Stroup (1982), *Economics: Private and Public Choice*, 3rd ed. (New York: Academic Press), pp. 518–19.

<sup>7</sup> See Michael S. Barr (2025), “Artificial Intelligence: Hypothetical Scenarios for the Future,” speech delivered at the Council on Foreign Relations, New York, February 18, <https://www.federalreserve.gov/newsevents/speech/barr20250218a.htm>. See also Anton Korinek and Donghyun Suh (2024), “Scenarios for the Transition to AGI,” NBER Working Paper Series 32255 (Cambridge, Mass.: National Bureau of Economic Research, March), <https://www.nber.org/papers/w32255>.

gains. In the second scenario, we see profound change, in which we extend human capabilities with far-reaching consequences.

Today, I will apply the same approach to analyze the potential effects of AI on the labor market. Of course, there is tremendous uncertainty about how AI will evolve and how it will affect the economy, as well as society more broadly. Amid this uncertainty, a scenario-based approach can give us a framework for thinking about the potential effects of AI on employment, real wages, and productivity, as well as for considering the possible role that government could play in influencing this transition.

### *Scenario 1: Incremental Progress*

Let's start with the "gradual" scenario, in which new AI technologies are adopted at a brisk, but not a breathless, pace or advance quickly at first and then plateau—perhaps because of constraints imposed by computing resources, the exhaustion of novel training data, and rising energy consumption.

Under this scenario, AI primarily operates by automating some—but not all—tasks within many occupations. We've seen some of this task substitution happen already: Computer programmers rely on AI copilots to write code, allowing them to focus on higher-level tasks, while customer support agents can use chatbots to improve and expedite their responses.<sup>8</sup> Lawyers draw on GenAI to conduct legal research, while AI-powered safety features improve the performance of human automobile drivers.

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<sup>8</sup> For evidence that GenAI increases the productivity of human programmers, see Sida Peng, Eirini Kalliamvakou, Peter Cihon, and Mert Demirel (2023), "The Impact of AI on Developer Productivity: Evidence from GitHub Copilot," February 13, <https://arxiv.org/pdf/2302.06590>. For similar evidence regarding customer support agents, see Erik Brynjolfsson, Danielle Li, and Lindsey Raymond (2025), "Generative AI at Work," *Quarterly Journal of Economics*, vol. 140 (May), pp. 889–942.

Under this scenario, as foundational models improve, novel use cases are discovered, and businesses continue to integrate AI into their operations, more and more occupations will be affected, and many jobs will use AI tools more intensively. As these technologies improve, even incremental change may allow AI to become accurate and cheap enough to replace some occupations altogether. It's hard to make predictions at this stage. But a plausible conjecture is that we could see, for example, fewer human programmers, lawyers, or commercial drivers. At the same time, most current occupations would persist in this scenario—albeit in modified and more productive forms.

Beyond existing occupations, general purpose technologies also encourage the creation of new occupations, fueled by new products and novel ways of doing business. It's difficult to envision the novel jobs that will replace the ones we might lose to an incremental AI scenario. But one possibility is that the future could bring us managers of AI agents, specialists in human–AI collaboration, ethicists, safety experts, and large numbers of people involved in adopting, maintaining, and educating about AI tools. Technology, and how we use a particular innovation, evolves in unpredictable ways, and we should expect to be surprised.

Under this scenario, jobs remain plentiful, real wages are buoyed by productivity gains, and employment and labor force participation remain high and could even rise, if strong wage growth entices new labor market entrants and if improvements in health care increase work capacity among older or disabled individuals. If the widespread adoption of AI proceeds gradually, then workers will have time to adjust, reducing the disruption to the labor market—though, as with previous general purpose technologies, AI would



likely imply that some groups of workers experience a painful process of dislocation and transition.

Retraining could help here. A recent survey carried out by the Federal Reserve Bank of New York found that many businesses plan to retrain their workers to use AI rather than laying them off.<sup>9</sup> In some cases, AI may disrupt career ladders by automating many entry-level tasks—such as reviewing legal documents or drafting code—that were historically performed by early-career workers. But if labor demand changes slowly enough, students and workers are more likely to have time to predict which skills will be marketable and to make and recoup human capital investments before their skills become obsolete.

What about the effect of AI on inequality? Some research suggests that GenAI may help less-productive workers catch up to their more-productive peers.<sup>10</sup> That said, the AI economy will likely put a premium on digital skills, facility with new technologies, and adaptability. The precedent of the computer revolution suggests that highly educated workers may benefit most, boosting wage inequality—a phenomenon called “skill-biased technological change.”<sup>11</sup> Another possibility is that the labor share of income could decline, if capital owners benefit more than wage earners—for example, because the gains accruing from AI adoption go to large, highly capitalized firms whose

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<sup>9</sup> See Jaison R. Abel, Richard Deitz, Natalia Emanuel, and Benjamin Hyman (2024), “AI and the Labor Market: Will Firms Hire, Fire, or Retrain?” Federal Reserve Bank of New York, *Liberty Street Economics* (blog), September 4, <https://libertystreeteconomics.newyorkfed.org/2024/09/ai-and-the-labor-market-will-firms-hire-fire-or-retrain>. Among surveyed businesses in New York and New Jersey, about half of businesses that planned to use AI within the next six months expected to retrain their current staff to use AI.

<sup>10</sup> See Shakked Noy and Whitney Zhang (2023), “Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence,” *Science*, July 13, vol. 381 (6654), pp. 187–92.

<sup>11</sup> See Claudia Goldin and Lawrence F. Katz (2008), *The Race between Education and Technology* (Cambridge: Harvard University Press).

technical capabilities, consumer networks, and training data allow them to develop state-of-the-art AI techniques.

*Scenario 2: Transformation*

Now let's consider an alternative scenario in which AI completely transforms the economy. As I described in my earlier speech, in this transformative scenario, humans employ AI to unleash their imagination and creativity—combined with robust investment in research and development—to make rapid breakthroughs that have the potential to improve our lives. With growth propelled by swift technological progress, society's resources would be vastly expanded, AI would spur revolutionary advances in health, and many individuals would enjoy more time for leisure activities.

Indeed, transformative AI could bring about a state of affairs that John Maynard Keynes famously envisioned almost a hundred years ago, one in which there are “ever larger and larger classes and groups of people from whom problems of economic necessity have been practically removed.”<sup>12</sup> At the same time, transformative AI could imply a much smaller role for human labor—a development that would entail sweeping social changes and profound challenges for government.

Under this scenario, AI would take over a broad range of existing jobs. As economist Anton Korinek writes, “AI systems advance toward mastering all forms of cognitive work that can be performed by humans, including new tasks that don't even exist yet.”<sup>13</sup> Building on developments we are already starting to see, improved chatbots

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<sup>12</sup> See page 372 in John Maynard Keynes (1930), “Economic Possibilities for Our Grandchildren,” in *Essays in Persuasion* (New York: W.W. Norton & Company, 1963), pp. 358–73.

<sup>13</sup> See page 9 in Anton Korinek (2024), “The Economics of Transformative AI,” *Reporter*, no. 4 (Cambridge, Mass.: National Bureau of Economic Research), pp. 9–12, <https://www.nber.org/sites/default/files/2025-01/2024number4.pdf>.

and AI agents would outperform their human counterparts in activities ranging from customer support to medical diagnosis. Along similar lines, advanced robotics could increasingly substitute for human workers in manual and production jobs. Widespread automation would bring many benefits. The availability and quality of many services could increase markedly, and many less-desirable jobs—such as those involving tedious tasks or dangerous working conditions—could be transferred to machines.

What jobs *would* exist in this more transformative scenario? As in the more gradual scenario—and just as has happened in the past, when earlier general purpose technologies were adopted—we would see the emergence of new occupations. These would notably include jobs that involve managing the new AI-dominated economy. In addition, some existing occupations would likely persist, at least for some time. This would be the case for three key reasons. First, some jobs may prove especially hard to automate. For example, plumbers and mechanics rely on physical dexterity and adaptability to situations—attributes that machines may find difficult to replicate, or to replicate cheaply. Second, in some contexts, consumers may insist on a human touch. Patients may still want human doctors and therapists, while parents may want human teachers and caregivers to look after their children. Third, even when AI has the technical capability to carry out tasks, some jobs are likely to be protected by laws and regulations. For example, legal and political systems would likely continue to insist on human judges and elected officials. Eventually, however, an increasing share of current jobs may be automated. The technological frontier is moving quickly, consumers' preferences may change as they become more comfortable interacting with AI, and the regulatory landscape could evolve to provide broader roles for AI.

It's difficult to say how many jobs will exist under transformative AI. On the one hand, it's possible that—as has happened so often in the past—the economy will find inventive new ways to keep most people employed. On the other hand, there are concerns that some workers could experience a large enough decline in their earnings potential that paid work may no longer be an available option. Employment and labor force participation could fall; displaced workers may grapple with a loss of daily routines, social connectedness, and the meaning they derived from employment. The risk of a significant decline in employment looms large in many people's concerns about AI, and it's important for policymakers to be attentive to that risk.

Even if AI ultimately creates as many jobs as it eliminates, we should expect that the transition will be difficult. Existing firms would likely reorganize their production, laying off workers in the process. They could also lose market share to technologically sophisticated start-ups, which could scale up with a minimal number of human workers managing AI subordinates.<sup>14</sup> Many displaced workers would have obsolete skills, and skill mismatch could lead to a structural increase in unemployment as these workers retool for new occupations. It is possible that unemployment might rise only temporarily. It is also possible, however, that more sustained increases could be observed. That would be the case if technology continued to evolve too quickly for many workers to keep up, leading to continual churn and ongoing dislocation.

How might transformative AI affect income inequality? Both traditionally high-wage occupations, such as lawyers and financial professionals, and lower-wage

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<sup>14</sup> See Erin Griffith (2025), "A.I. Is Changing How Silicon Valley Builds Start-Ups," *New York Times*, February 20. See also Microsoft (2025), *2025: The Year the Frontier Firm Is Born*, Work Trend Index Annual Report, April 23, <https://www.microsoft.com/en-us/worklab/work-trend-index/2025-the-year-the-frontier-firm-is-born>.

occupations, such as factory and retail workers, could be automated, and it is difficult to predict how AI would affect wage structures. But the largest wage gains would likely go to the highest-skilled workers, as they would be best positioned to implement frontier technologies and help oversee the AI economy. In addition, if capital owners are the main beneficiaries, the labor share of income could decline precipitously.

Transformative AI could bring about profound improvements in living standards, leisure opportunities, and human health. At the same time, society would confront profound distributional changes and potential challenges. Much would depend on how broadly the economic benefits are shared, how policymakers respond, and how society adapts to the rapid pace of change.

### **How Will We Know Which Future We Are Living in?**

The world looks very different across these two scenarios. As AI spreads throughout the economy, how will we know which world we're living in, particularly in view of the likelihood that AI adoption will proceed at different rates in different occupations and industries?

First, we will need to track how many businesses are using AI and how it is affecting their operations. Recent surveys give different impressions about AI adoption thus far, but they consistently show rapid increases in usage over time.<sup>15</sup>

Second, we will need to monitor AI's evolving technological capabilities. AI developers test their models against human performance in benchmark activities like

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<sup>15</sup> For a summary of recent survey evidence on AI adoption, see Leland Crane, Michael Green, and Paul Soto (2025), "Measuring AI Uptake in the Workplace," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, February 5), <https://doi.org/10.17016/2380-7172.3724>. Across six firm-level surveys, the share of respondents using some form of AI ranges widely—from 5 to 40 percent—likely in part reflecting differences in sample composition, question wording, and the period over which AI usage is measured. Across 10 individual-level surveys, usage of GenAI generally ranges between 20 and 40 percent, with much higher rates among computer programmers.

standardized tests and visual tasks. Results of these tests will continue to provide important clues about which activities, and thus which occupations, are at risk of being automated. Along these lines, economists have already developed measures of occupations' exposure to automation. They have based these measures on the characteristics of the tasks involved in different occupations.<sup>16</sup> Of course, as the set of tasks that AI can perform expands, these measures can be updated accordingly.

A third way to judge how AI is changing the economy is that data on job openings will likely be a leading indicator of changes in labor demand. What kinds of jobs are employers creating? What skills do they cite in job ads?<sup>17</sup>

And, lastly, job growth by occupation and industry is likely to reflect the emerging effects of AI. So far, the imprint of AI is difficult to discern in the employment statistics, but that is likely to change. It may be difficult to disentangle the effects of AI from the other determinants of employment growth, especially in real time. But in the event of truly sweeping changes in the occupational structure, the effects of AI should show up in the data.

## **Looking Ahead**

What do these two scenarios imply for society? In scenario 1, the issues that society has to address will be more straightforward. Policymakers will have to decide

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<sup>16</sup> For examples of this approach, see Carl Benedikt Frey and Michael A. Osborne (2017), "The Future of Employment: How Susceptible Are Jobs to Computerisation?" *Technological Forecasting and Social Change*, vol. 114 (January), pp. 254–80; Erik Brynjolfsson, Tom Mitchell, and Daniel Rock (2018), "What Can Machines Learn, and What Does It Mean for Occupations and the Economy?" *AEA Papers and Proceedings*, vol. 108 (May), pp. 43–47; Edward W. Felten, Manav Raj, and Robert Seamans (2018), "A Method to Link Advances in Artificial Intelligence to Occupational Abilities," *AEA Papers and Proceedings*, vol. 108 (May), pp. 54–57; and Eloundou, Manning, Mishkin, and Rock, "GPTs Are GPTs" (see note 3).

<sup>17</sup> See Daron Acemoglu, David Autor, Jonathon Hazell, and Pascual Restrepo (2022), "Artificial Intelligence and Jobs: Evidence from Online Vacancies," *Journal of Labor Economics*, vol. 40 (April), pp. S293–340.

how to regulate emergent technologies, education and training programs will have to be tailored to shifts in labor demand, and some labor market regulations may need to be updated. In scenario 2, the issues that society will need to address will be more profound. Questions will include how to ensure that the economic gains associated with AI are broadly shared across individuals and households, and how to adapt social institutions to a world in which many more individuals in their prime working years may be working less. Fortunately, although this second scenario would entail many difficult challenges, it also implies a world in which society has many more resources to deploy against those challenges.

Those are some of the big questions that society may need to grapple with in the future, and most of these questions are not those that will be primarily addressed by monetary policymakers. As a central banker, I can speak more specifically about how structural changes in the economy related to AI could affect monetary policy considerations—in particular, the Federal Reserve’s dual mandate to promote maximum employment and stable prices. Monetary policy considerations could be affected in many ways; I will limit myself to two prominent possibilities.

First, AI may require monetary policymakers to reassess our estimates of the natural rate of unemployment, which informs our assessment of the cyclical state of the economy and thus the appropriate stance of monetary policy. The natural rate, which we call  $u^*$ , is the unemployment rate that corresponds to the maximum level of employment that can be maintained without producing undesirably high inflation. Among other things,  $u^*$  depends on the efficiency with which matches are formed between workers and firms, and it could rise if shifts in labor demand across industries and occupations

lead to skill mismatch and lengthy unemployment spells as workers retrain and switch careers. The natural rate also depends on the demographic composition of the labor force, which AI could affect. If AI shifts the workforce toward groups that have higher labor force attachment but lower unemployment rates (such as college graduates), the result could be downward pressure on  $u^*$ . It should be stressed that  $u^*$  is never directly observed and is difficult to discern in real time. But economists use a wide range of models to estimate the natural rate, and we can use those models to see how  $u^*$  is changing as AI is adopted more widely.<sup>18</sup>

Another related consideration relevant for monetary policy is how economic changes due to AI will affect the neutral interest rate, or  $r^*$ , which is the level of the real interest rate consistent with the economy being at its potential and inflation being at our 2 percent objective. Economic theory suggests that a permanently higher growth rate of productivity, of the kind that might arise under either AI scenario, tends to raise  $r^*$ . When that happens, a higher real interest rate would be required to deliver any desired monetary policy stance. A challenge that we face is that it is difficult to work out in real time how  $r^*$  is evolving. But we can make judgments about developments in the

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<sup>18</sup> See Brandyn Bok, Richard K. Crump, Christopher J. Nekarda, and Nicolas Petrosky-Nadeau (2023), “Estimating Natural Rates of Unemployment: A Primer,” Working Paper Series 2023-25 (San Francisco: Federal Reserve Bank of San Francisco, August), <https://www.frbsf.org/wp-content/uploads/wp2023-25.pdf>. One approach for estimating  $u^*$  is to aggregate across demographic groups that differ in their average unemployment rates over long periods. Another common approach is to estimate state-space models that incorporate a Phillips curve relationship between unemployment and inflation, as in Thomas Laubach (2001), “Measuring the NAIRU: Evidence from Seven Economies,” *Review of Economics and Statistics*, vol. 83 (May), pp. 218–31. In addition, assessments of the natural rate can be informed by models that yield estimates of matching efficiency, such as Regis Barnichon and Andrew Figura (2015), “Labor Market Heterogeneity and the Aggregate Matching Function,” *American Economic Journal: Macroeconomics*, vol. 7 (October), pp. 222–49; and Hie Joo Ahn and Leland D. Crane (2020), “Dynamic Beveridge Curve Accounting,” Finance and Economics Discussion Series 2020-027 (Washington: Board of Governors of the Federal Reserve System, March), <https://doi.org/10.17016/FEDS.2020.027>.



behavior of  $r^*$  by monitoring the relationship between economic activity and interest rates and by using financial market information to estimate longer-run real interest rates.

### **Conclusion**

I'll return to the broader point and conclude. AI is poised to transform our economy, likely in profound ways. But the speed and extent of that transformation are not yet clear. AI is likely to boost productivity, increase scientific discovery, and transform the nature of work. How these developments unfold will have important implications for society and for central bankers.