

## Could AI offset baby boomers retiring?

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The future is being tugged in different directions by powerful forces that don't move in unison. Sometimes they reinforce each other; sometimes they cancel out. The question is which will dominate – and how we can prepare.

Today, I invited Joe Davis, global chief economist and global head of the Investment Strategy Group at Vanguard, to share his view on this question as someone who's [studied AI and other megatrends in depth](#) from a unique vantage point. Vanguard is one of the world's largest investment companies, managing more than \$10 trillion in assets. In this essay, Joe argues that two of the biggest forces – technology and demographics – may end up balancing each other in surprising ways.

Enjoy –

Azeem

## Could AI offset baby boomers retiring?

By Joe Davis

This year marks the onset of the “silver tsunami” – the wave of baby boomers transitioning into retirement. More Americans will turn 65 in 2025 than ever before. Between now and the year 2035, approximately 16 million Americans will retire, creating profound impacts on the economy, healthcare and society at large. As the ratio of active workers to retirees falls, we could face a challenge to economic growth caused by the combined pressure of two megatrends: demographics and deficits. Fewer workers generate less output, and an aging population increases fiscal pressures by consuming more healthcare and straining Social Security.

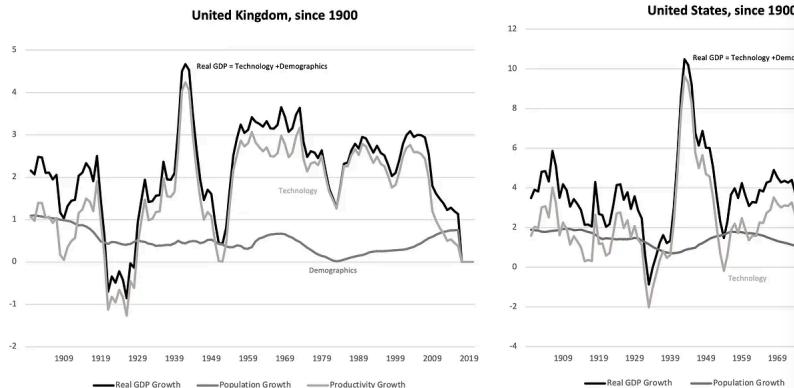
However, history tells us that demographics are not destiny. It can be a factor, but it's not fate. Technology (see charts below) has historically — and should again — exert a far larger influence on economic outcomes than birthrates. We need automation not as a threat to jobs, but as a catalyst for productivity. This is a central insight of my team's [research](#) at Vanguard: AI is not merely another labor-market disruption, but a potential solution to some of the most pressing economic challenges of our time.

Imagine if baby boomers never retire. That's the scale of productivity AI might deliver – if our models, and history, are right.

**GDP follow technology, not demographics**

Notes: Demographics represents rolling 10-year average annualized growth in population. Technology represents rolling 10-year average annualized growth in real GDP per capita, a proxy for productivity growth. The Real GDP line is the sum in population growth and productivity growth, or  $\text{GDP} = \text{Demographics} + \text{Technology}$ . Scale in U.S. figure truncated during WWII for visual clarity.

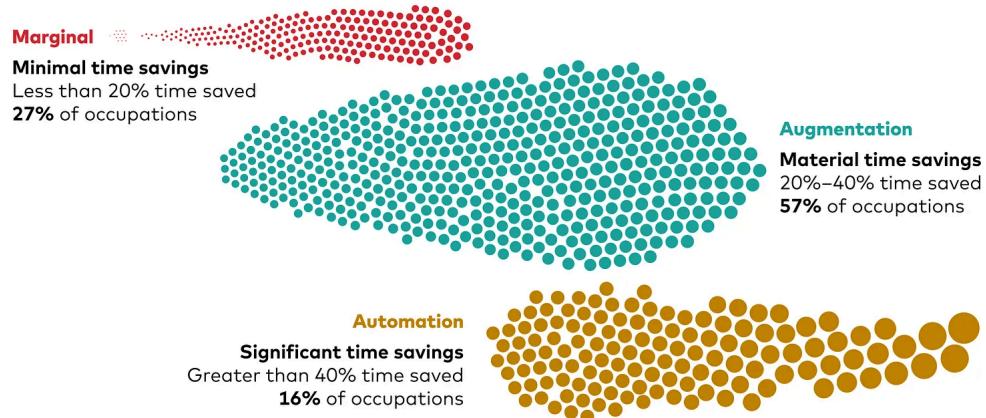
Source: Author's calculations from Bank of England, U.S. Census Bureau, and FRED databases.



Unlike others who speculate about AI's future, we base our views on long-term data and scenario probabilities to guide investors in assessing risk.

The product of this research, which began in earnest more than two decades ago, is the [Vanguard Megatrends Model](#), our latest framework. This forward-looking, data-driven model provides a sense of the most likely economic scenarios through 2035, driven by an interplay of factors: technology, demographics, globalization, and fiscal debt – so-called megatrends. Behind the model is a powerful forecasting engine: a vector autoregression (VAR) that tracks 15 economic signals over 130 years of data and billions of data points. These include real GDP growth, inflation, interest rates, labor force participation, and equity valuations, among others.

In developing the model, my team looked at the future of work by examining more than 800 US occupations to analyze how AI may automate or augment each of the tasks required in these roles, rather than the roles in their entirety. We find that most American workers will feel AI's impact – but not as a replacement.



The size of the circle shows the projected time saved from AI.

• 20% • 40% • 60%

In the occupations represented by the yellow dots (the 16% of jobs where automation could reach 40%+ time savings), job loss is expected. Source: Joe Davis/Vanguard 2025

For most jobs – likely four out of five – AI's impact will result in a mixture of innovation and automation, and could save about 43% of the time people currently



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**spend on their work tasks.** For example, if your job includes daily tasks such as scheduling meetings, data entry, or managing projects, many of those tasks are likely to be automated. This frees up time for higher-value tasks. We find that task augmentation will enhance efficiency across more than 400 occupations, including high school teachers, pharmacists, and human resource managers.

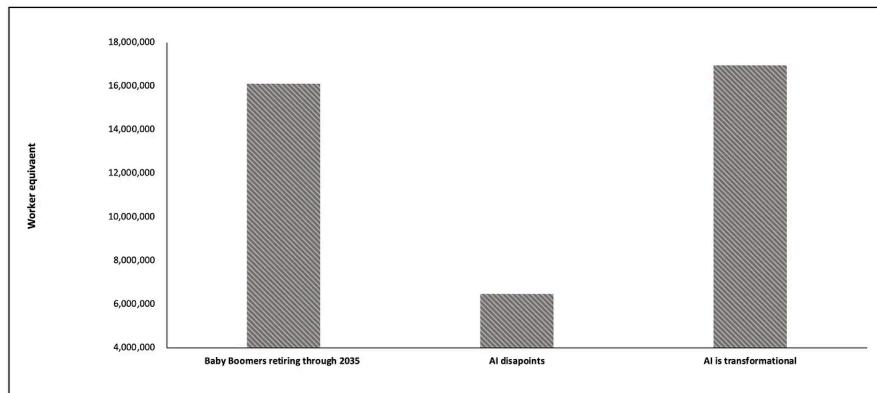
Consider a nurse who spends up to two hours per shift manually entering data into Electronic Health Records (EHRs). With AI automation, using natural language processing (NLP), those hours can be spent on direct patient care. However, we don't think this will result in shorter workweeks for most of us, and it won't systematically eliminate most jobs. Instead, workers' time will increasingly shift to higher-value-added and uniquely human tasks.

When augmentation like this occurs, the quality of a product or service goes up, boosting GDP and enhancing the value of our work (did someone say pay raise?). This mixture of augmentation and automation leads to the *evolution* of job roles rather than their elimination.

Yes, there are jobs with more repeatable tasks that will face decline. Computer programmers spend almost 45% of their day on programming and performance testing, tasks in which AI systems are likely to surpass human-expert level proficiency in a few years. Fortunately, many of these displaced programmers will likely transition into new AI-oriented occupations given the relative task-similarity across high-skilled computer jobs.

#### Transformational AI eases the demographic drag

- Source: *The author*



This productivity boost comes at a fortuitous time as baby boomers retire. If AI continues to advance and automate and augment tasks over the next 10 years, that productivity lift would put US GDP growth near 3% during the 2030s. Broadly speaking, that would be the fastest growth in the US since the late 1990s.



#### Which future are we preparing for: boom or bust?

There are many who are skeptical of the promise of AI. Will AI follow the path of social media, which was widely adopted but did not boost productivity – and, as anyone caught zombie scrolling knows, sometimes even saps it? Or will it boost

productivity only slightly, with our US economic headwinds of demographics and deficits swamping the benefits? Our model uses a probabilistic approach to predict these scenarios so that investors can prepare for both possible outcomes.

#### ***Productivity Surges scenario (45–55% probability)***

Our leading scenario is that AI becomes a general-purpose technology, like electricity. This eventually lifts productivity more than the personal computer and the Internet by the first half of the 2030s. AI eventually sparks new industries, and inflation remains well in check, with deficits declining given higher tax revenues from stronger growth.

#### ***Deficits Drag Scenario (30–40% probability)***

Yet, we also model that there is a concrete chance that AI disappoints – more hype than help. Meanwhile, government deficits keep climbing, interest rates and borrowing costs rise, and credit slows. Inflation is stubborn. Homeownership moves more out of reach, standards of living fall, and US growth becomes less exceptional and more similar to Europe's growth.

Importantly, there is little that monetary policy can do to improve GDP if AI disappoints, as our research has shown that monetary policy has relatively little effect on GDP. Low interest rates in Japan, for example, haven't stimulated growth. How individuals and organizations leverage technology to increase productivity is key to unlocking the economic growth engine.

### **Building the skills of the future**

Technological transitions are rarely smooth. But we've learned what not to do – ignore the worker. The workers most threatened by automation are those who perform repetitive, single-task jobs. Admittedly, governments have struggled during previous technological revolutions to adequately retrain workers for the jobs of tomorrow; the lingering social consequences of de-industrialization serve as a stark reminder. As an example, Vanguard is located just over an hour from Allentown, made famous by Billy Joel as an example of the collapse of the Rust Belt. Lost steel jobs resulted in lost wages, benefits and tax base for nearly two decades, before the steel and manufacturing industries were slowly replaced by healthcare and e-commerce-related firms (e.g., Amazon fulfillment centers).

Reducing barriers to occupational transitions, such as unnecessary educational requirements or costly certifications, provides a cost-effective means to enhance workforce mobility. From an employer perspective, the post-COVID labor market recovery highlighted the value of expanding talent pools beyond traditional channels and recognizing the portability of skills across occupations to meet hiring needs.

As my own children enter the workforce, I've thought a lot about the future of work and what skills they need to be successful in a technology-driven future. Human employment has always involved the acquisition of new skills as technology advances, and humans have been remarkably adaptable.

What skills can't be easily automated? Critical thinking, creativity, emotional intelligence, and complex problem-solving are essential skills in fields where human interaction and nuanced decision-making are crucial. It's hard to think of an

occupation where this isn't critical. Healthcare, education, and social work are areas where AI can augment human capabilities but can't fully replace them.

And even though AI may automate many programming or IT tasks, AI itself requires critical thinking and technology proficiency to integrate it into existing workflows successfully. STEM degrees with strong analytical components may not command the same wage premium as they have in the past twenty years, but they will still be in demand.

### **As an investor preparing for an AI-enabled future, diversify**

Why do we build models to forecast future probabilities, like the future of work? Not just to guide our children's careers or tinker with AI in the abstract, but to act. As investors saving for retirement, education, and long-term goals, we need to take informed risks and prepare for the most likely outcomes. For example, knowing the impact AI may have, we can open our aperture and consider more than the "Magnificent Seven" – the companies directly involved in AI and advanced computing – but look to which industries will benefit from AI as a general-purpose technology, what new sectors may emerge, and how these shifts could affect the economy and markets amid demographic changes, globalization, and fiscal deficits.

As our model shows, the full transformative impact of AI is likely to reverberate across industries and sectors, stressing the age-old importance of diversification. Some of these shifts will be obvious in hindsight. Most won't be. That's why I return to first principles: stay diversified, think long-term, and build portfolios that can adapt to acceleration. Because when transformation comes, it rarely announces itself.

*Disclaimer: The views expressed in this essay are those of the authors and do not necessarily reflect the views of Exponential View or Azeem Azhar.*



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Hugh Knowles 26m

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In the top graph is GDP per capita a good proxy for technology? Surely GDP per capita could be changed by many other factors?

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