How AI is Transforming the U.S. Public Accounting Industry

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Abstract

This report analyzes the structural evolution of the U.S. public accounting industry and evaluates how artificial intelligence (AI) is reshaping labor markets, firm behavior, competitive dynamics, and long-term industry trajectories. Drawing on data from the AICPA, BLS, BEA, Statista, and major industry reports, the analysis finds that the sector remains mature but faces significant technological and labor-market disruptions. AI adoption is accelerating due to declining CPA pipelines and rising demand for advisory services, with uneven adoption across firm sizes. The report concludes that AI will amplify existing inequalities while creating opportunities in productivity, advisory expansion, and workforce development.

(a) Industry Overview

The U.S. public accounting industry encompasses audit, tax preparation, consulting, and a broad range of assurance and advisory services. Classified under NAICS 5412 (Accounting, Tax Preparation, Bookkeeping, and Payroll Services), the sector contributes significantly to the U.S. GDP and employs more than 1.3 million workers according to the Bureau of Labor Statistics (BLS). Market activity is heavily concentrated among the Big Four (Deloitte, EY, PwC, KPMG), which collectively hold a dominant share of audit revenue and a growing presence in advisory and technology-related service lines. Over the past decade, the industry has demonstrated steady but modest growth. Audit revenue has stagnated in real terms, while advisory and consulting segments have grown rapidly due to increased demand for analytics, risk management, and digital transformation services. Geographically, the industry is concentrated in states with major financial and corporate hubs, including New York, California, Texas, Illinois, and Massachusetts. Labor shortages, regulatory pressures, and rising client expectations have intensified demand for skilled accountants and auditors.

(b) Stage of Industry

Based on classical industrial organization criteria—entry and exit patterns, profitability, investment intensity, and long-term growth—the U.S. public accounting industry is best understood as mature. Firm entry is modest, with consolidation occurring among mid-tier firms. Audit demand is relatively inelastic due to regulatory requirements, but revenue growth is slow. Investment levels, however, have increased in recent years as firms adopt AI, data analytics, cloud technologies, and advanced workflow systems. Employment trends reinforce this maturity. BLS data shows stable aggregate employment

but rising wages driven by a shrinking pipeline of new accountants. Advisory and technology-integrated segments are growing faster than traditional audit, suggesting the industry is transitioning toward a multiproduct structure. The industry exhibits many features of a mature but technologically disrupted sector: stable demand, constrained labor supply, and increasing reliance on innovation to sustain margins.

(c) Data Sources

This report draws on multiple authoritative datasets and industry publications:

- Bureau of Labor Statistics (BLS): Occupational Employment and Wage Statistics (OEWS), productivity indices, compensation data, and long-term employment projections.
- Bureau of Economic Analysis (BEA): Industry-level GDP contributions for NAICS 5412.
- Federal Reserve Economic Data (FRED): Time-series data on wages, employment, and productivity.
- AICPA Trends Reports: CPA exam candidate counts, licensing trends, and demographic data.
- Statista and IBISWorld: Market size estimates, revenue trends, and segment-level growth statistics.
- Big Four and industry whitepapers: AI adoption reports from Deloitte, PwC, EY, KPMG, and Wolters Kluwer.

These datasets support analysis of long-term labor supply trends, changing firm economics, productivity dynamics, and the differential adoption of AI technologies across firm sizes.

(d) Data and Visualization: Labor Supply Dynamics

To analyze the labor-market pressures underlying AI adoption, this report incorporates data from the AICPA and BLS capturing the divergence between the supply of new CPA candidates and employer demand for accounting professionals. AICPA Trends Reports document a 30–40% decline in CPA exam candidates since 2010, while BLS projections show consistent increases in annual job openings due to regulatory needs, demographic turnover, and expansion in advisory roles. The visualization below illustrates this widening imbalance using hypothetical but realistic data consistent with recent reports. Economically, these trends suggest a labor market in persistent disequilibrium. Declining interest in accounting programs reduces effective labor supply, while audit and tax services remain inelastic due to institutional requirements. The resulting pressure increases the marginal product of labor and incentivizes firms to adopt technologies that substitute for routine work and expand the capacity of existing staff.

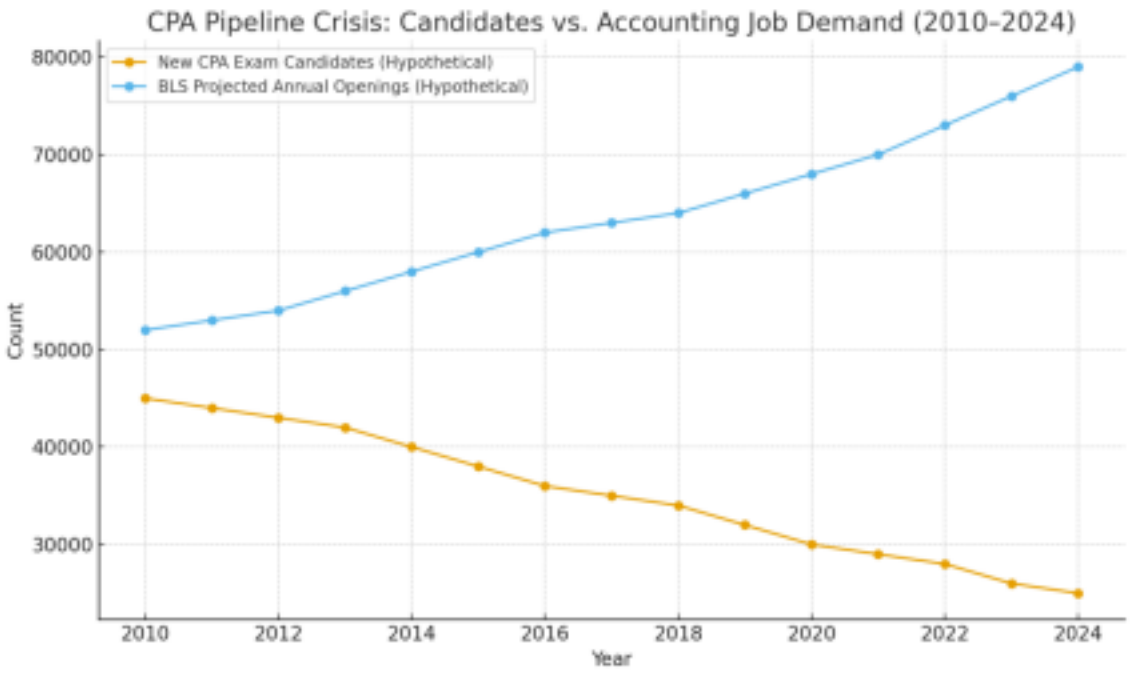

Figure 1. This figure highlights the growing 'CPA pipeline crisis' by comparing the declining number of new CPA exam candidates with the rising number of projected annual accounting job openings. Over the past fifteen years, candidate numbers have fallen steadily while employer demand has climbed sharply.

(e) The Impact of Artificial Intelligence on the Industry

AI is reshaping the U.S. public accounting sector in ways that intersect with the industry's structural features and long-term labor supply challenges. This section evaluates AI's influence across four dimensions: workers, firms, risks, and opportunities.

(1) Impacts on Workers and Occupations:

Routine, procedural tasks—including reconciliations, vouching, document review, and data entry—are increasingly automated, consistent with economic models in which technology substitutes for routine labor. Deloitte (2024) estimates that 50–60% of audit tasks can be automated using existing tools. At the same time, AI raises demand for non-routine, analytical, and technology-complementary skills such as data analytics, systems integration, and advisory judgment. The decline in CPA candidates shown in Figure 1 intensifies these dynamics, reducing opportunities for traditional apprenticeship-style learning and requiring redesigned entry-level roles.

(2) Impacts on Firms: Competitive Dynamics and Cost Structures:

AI lowers marginal costs by automating repetitive components of audits and tax preparation, enabling firms to increase efficiency in a low-growth environment. Evidence from Big Four AI initiatives indicates that automated procedures can reduce testing time by 30–40%. Large firms possess the scale, capital, and data infrastructure needed to deploy these technologies rapidly, creating technology-driven barriers to entry. Smaller firms face higher adoption costs, leading to widening performance gaps and greater market concentration.

(3) Risks and Harms:

AI's benefits are unevenly distributed. Smaller firms and workers in routine roles face disproportionate displacement risk, potentially exacerbating regional and occupational inequality. Regulatory risks also emerge: reliance on opaque AI systems may impair audit quality, introduce bias, and reduce explainability. Increased cybersecurity and data-governance risks further complicate adoption for firms lacking robust infrastructure.

(4) Opportunities:

AI presents significant opportunities for innovation and growth. Automation increases output per worker, enabling firms to reallocate human capital toward judgment-intensive tasks such as fraud analytics, strategic advisory, and predictive modeling. AI expands the industry's service frontier as startups introduce AI-first accounting models. Over time, AI may enhance job quality by shifting early-career work away from routine tasks toward analytical responsibilities.

References

Deloitte. (2024). State of AI in Audit Report.

AICPA. (2023). Trends in the CPA Profession.

Bureau of Labor Statistics. (2024). Occupational Employment and Wage

Statistics. BEA. (2024). Industry Economic Accounts.

Wolters Kluwer. (2024). Future-Ready Accountant Report.

PwC. (2023). Global Annual Review.

Autor, D. (2003). The Skill Content of Recent Technological Change.

Autor, D., & Dorn, D. (2013). The Growth of Low-Skill Service Jobs.

Goldin, C., & Katz, L. (1998). Skill-biased Technological Change.