Modeling Post-Study Work Pathways: H-1B, OPT, and CPT under Policy Shock

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Introduction

Proposals to raise the H-1B visa filing fee to as high as USD 100,000 represent a major policy shock with potential implications for the United States' ability to attract and retain global talent. International graduates from U.S. universities contribute significantly to high-skill industries such as technology, finance, and professional services. Their employment pathways typically begin with temporary authorizations such as Optional Practical Training (OPT) and Curricular Practical Training (CPT) before transitioning to long-term sponsorship under the H-1B program. Understanding how employers respond to cost escalation across these pathways is critical for maintaining the competitiveness of the U.S. innovation economy.

Data

The analysis draws on three integrated data sources. The first is the official USCIS H-1B DataHub from 2015 to 2023, which contains annual records of petition approvals and denials by employer. The second is a curated dataset of Fortune 500 companies employing international graduates under OPT authorization in 2024, reflecting firms' participation in post-study employment programs. The third source is the CPT-friendly employer dataset compiled from Day-1 CPT universities, identifying institutions and organizations that engage students through academic employment authorization. These datasets were harmonized using a Python-based preprocessing workflow in prepare.py to standardize employer names, ensure numeric consistency, and construct categorical variables for cross-program participation.

Methodology

The methodological framework combines elasticity modeling with empirical simulation to estimate employer responses to fee changes. The model assumes a baseline sponsorship cost of USD 25,000 per H-1B application, incorporating government filing fees, legal services, and administrative expenses. A cost increase to USD 100,000 represents a four-fold escalation relative to the baseline. Using elasticity coefficients between −0.15 and −0.45, the simulation computes proportional changes in employer applications under varying flexibility assumptions. The Flexibility Index derived from employer participation in multiple visa programs (H-1B, OPT, CPT) serves as a measure of adaptive capacity. Interactive visualization and sensitivity analysis were implemented in the Streamlit environment to explore scenario-based impacts.

Results

Descriptive analysis reveals that employer reliance on high-skill foreign labor remains stable across 2015–2023, even under periods of regulatory tightening. The simulation results show that a USD 100,000 H-1B filing fee would reduce applications by approximately 45 to 135 percent, depending on employer elasticity. However, firms with greater flexibility—particularly those active in OPT and CPT channels—are able to offset these declines by reallocating employment through temporary authorizations. Technology and finance sectors demonstrate the highest adaptive capacity, maintaining overall talent inflows, while consulting and professional services exhibit stronger dependence on H-1B sponsorship and face sharper adjustment pressures. The results indicate that the post-study employment ecosystem does not contract but undergoes structural redistribution.

Policy Recommendations

The findings suggest that policy reform should recognize sectoral heterogeneity and firm adaptability. First, a tiered H-1B fee structure based on employer size or prevailing wage could protect small and medium enterprises while maintaining fiscal objectives. Second, extending the STEM-OPT period from 36 to 48 months would provide additional continuity between visa cycles, mitigating the pressure from OPT to H-1B transitions. Third, expanding cap-exempt eligibility to universities, nonprofit organizations, and research institutions would preserve innovation-critical sectors from potential labor shortages. Finally, instituting a transparency mechanism for reporting combined H-1B, OPT, and CPT utilization would enhance the quality of evidence available for future policy evaluation.

Conclusion

This study demonstrates that increasing H-1B sponsorship costs would not eliminate the demand for international talent but rather shift it across alternative visa programs. The resilience of the post-study employment ecosystem lies in adaptability and diversification rather than scale. Sectors with diversified visa portfolios, such as technology and finance, are better equipped to sustain participation and maintain competitiveness. A data-driven, differentiated policy approach that combines moderate fee adjustment, extended training duration, and expanded cap-exempt provisions is essential for sustaining the United States' leadership in global innovation and high-skill employment.