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Immigration Policies Post Study Work Rights and Economic Impacts on Higher Education in Developed Nations

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Abstract: International higher education in developed nations is increasingly exposed to abrupt shifts in immigration rules and post-study work (PSW) pathways. This study examines how changes in PSW duration, eligibility, and employer-sponsorship predictability reshape (i) international student inflows, (ii) university net tuition and research cross-subsidies, and (iii) graduate retention and local labor-market indicators, with particular attention to the United States while benchmarking the United Kingdom, Canada, and Australia. We measure PSW regimes through an intensity index with a monthly time series and a predictability of sponsorship, and we connect policy shocks to outcomes through a staggered difference-in-differences/event study approach, supplemented by synthetic control studies for large discrete policy changes. The empirical strategy reports complete model results (sample sizes, fixed effects, clustered standard errors, and pre-trend tests) and distinguishes between short-term enrollment outcomes, medium-term retention/completion, and institutional financial outcomes. Across policy events, a reduction in PSW routes is linked to a decrease in international enrolments and net tuition revenues, while a relaxation of PSW rules is linked to better inflows and more stable cross-subsidies between tuition and research. Outcomes related to graduate retention are consistent with PSW accessibility and correlate with changes in vacancy-fill measures in skill-intensive industries. The results are discussed in terms of policy-activated changes in the return on study and work, mediated by network externalities and institutional discount rate behavior.

Keywords: Immigration Policy, Post Study Work Rights, International Students, University Finance, Endogenous Migration, Labor Markets.

1. Introduction

In developed countries, universities increasingly rely on international students as a source of overall tuition income, research subsidies, and the strength of graduate talent pipelines, particularly in contexts where public funding increments are slow and tuition costs are high (OECD, 2023; NAFSA: Association of International Educators, 2024). Post-study work (PSW) visa rights and associated immigration policies frame the return to study expectation, and hence the application, enrollment, and retention rates of potential students. Policy instruments such as PSW visa term, threshold criteria, employer sponsorship routes, and quotas shape the likelihood of graduates remaining in the country after graduation, and hence university income and local talent availability to firms (Altbach & Reisberg, 2017; Peri *et al.*, 2015). In the last decade, policy changes in the United States, United Kingdom, Canada, and Australia demonstrate how small changes to PSW visa terms reshape destination preferences, redistribute student inflows across national destinations, and university income paths over a few enrolment cycles (Migration Advisory Committee, 2024; Immigration, Refugees and Citizenship Canada, 2025a). As students consider salary differentials and support in destination choices, the policy context combines with migrant networks to reinforce or weaken responses, yielding nonlinear outcomes for university finances and local talent availability to firms (Munshi, 2003; Beine *et al.*, 2011).

In this context, the article poses three questions that are of interest to the financial sustainability and innovation ecosystems of universities. First, what is the impact of the rights of PSW and immigration routes for family, employment, and other categories on the number of international students, their distribution by discipline and level, and the conversion of enrolments into university finances (OECD, 2023). Second, what is the overall impact



on the local labor market and firm surplus value of the tightening or relaxation of PSW regimes, in light of evidence that skilled migrants complement native workers and contribute to productivity gains (NAFSA: Association of International Educators, 2024; Peri *et al.*, 2015)? Third, what are the steady-state solutions for restrictive versus liberal policies in the long term, taking into account endogenous responses to migration and networks, including changes in equilibrium for tuition dependence, research strength, and graduate retention (Beine *et al.*, 2011). These questions maintain a global perspective centered on developed systems, with a particular focus on the United States, where policy reforms have significant spillover effects for student mobility and university finances (NAFSA: Association of International Educators, 2024; Migration Advisory Committee, 2024).

This paper has three contributions. First, it presents a channel-differentiated model incorporating endogenous migration and earnings incentives. The model views PSW rights as a fundamental differentiator that changes the expected post-graduation earnings and the likelihood of legal labor market entry, with migrant networks as supply-side factors conditioning the magnitude and pace of responses to policy shocks (Munshi, 2003; Beine *et al.*, 2011). Second, it uses a cross-country research design for developed countries with US-centric identification. By matching significant US policy events with contemporaneous changes in the United Kingdom, Canada, and Australia, the paper harnesses quasi-experimental variation amenable to difference-in-differences and event studies distinguishing destination-specific effects from global cycles of demand in the destination choices of students reoptimizing under changed PSW conditions or opportunities (Australian Government Department of Home Affairs, 2024). Third, it highlights the finance-oriented transmission mechanism from enrollment to net tuition, cross-subsidies, and research capacity. International full-time equivalent students are linked to gross tuition, institutional discounting, and net tuition revenue; these revenue changes are, in turn, tied to research income and auxiliary operations, as well as domestic employment outcomes such as vacancy fill rates in skill-intensive sectors that proxy firm surplus (Peri *et al.*, 2015). In combination, the integrated mechanism helps to explain how restrictive PSW policies might weaken institutional finances and employment, while liberal policies can help to stabilize finances, maintain research, and improve regional productivity (Peri *et al.*, 2015; Migration Advisory Committee, 2024).

The rest of this article is organized as follows. The next section surveys the literature on international student economics, immigration policy instruments, PSW policies, and migrant networks, and it develops testable hypotheses about policy channels and their effects on university finances and employment outcomes (Altbach & Reisberg, 2017). The methodological section introduces the conceptual framework and empirical approach, including identification via policy shocks, event-time analysis, and synthetic control studies in the United States and other major competitors (Immigration, Refugees and Citizenship Canada, 2025a). The data section introduces the multi-country panels of institutions and labor markets, and it explains the coding of PSW policy intensity, sponsorship routes, and channel shares. The results section reports policy impacts on enrollment, net tuition, research capacity, and employment, and it includes a comparison table of results across countries and policy types. The discussion section interprets the magnitudes of policy impacts for university administrators and policymakers, and the conclusion summarizes key design principles for balanced PSW policies that support institutional sustainability and innovation-driven productivity growth.

Cross-national comparison is employed in this research effort to shed light on mechanisms and to circumscribe interpretation rather than to suggest that estimated effect sizes are fixed across countries. The rules governing post-study work, as well as the financing of higher education, differ in the degree to which institutions depend on international tuition to cross-subsidize teaching and research. Such differences have implications for baseline exposure and thus the expected size of enrollment, retention, and revenue effects. Thus, our main identification strategy relies on policy changes over time within countries, and cross-national evidence is offered as organized context for understanding why responses might differ across systems.

Based on a destination choice model with policy and cost constraints and an institutional response model with budget pressure, the research work proposes to test four hypotheses. H1: Policy tightening will decrease new international enrollment because of decreased net returns and probabilities of approval. H2: Policy tightening will decrease continuation and completion because of decreased work pathways and affordability, increasing the risk of stop-out. H3: The effects will be larger for institutions that are more dependent on international tuition revenue, making recruitment and pricing adjustments incomplete in the short term. H4: When one destination tightens, some



of the demand will shift to competing destinations, suggesting that the effects will vary by country with different financing and pathway regimes.

This research contribution is situated as a theory-driven empirical evaluation of the role of post-study work policy design in shaping international student demand, financial risk to universities, and graduate retention. The contribution is not a general policy analysis. Rather, we specify a behavioral mechanism based on returns to study and post-study employment, and we formalize this mechanism into a very small number of explicit hypotheses. We test these hypotheses using straightforward panel specifications with clearly articulated identification assumptions, diagnostic tests, and uncertainty estimates. The policy analysis is maintained only to interpret the results and to explain how design elements such as duration, eligibility, and sponsorship predictability relate to the mechanism.

2. Literature Review

In advanced systems, international students currently represent a substantial proportion of gross and net tuition revenues, which are often used to cross-subsidize research and graduate education. Cross-national fiscal data analysis indicates that when public funding is flat or declining, institutions rely on international full-time equivalents to offset changes in operating budgets; discounting arrangements transform high sticker prices into net tuition flows that finance labs, Ph.D. support, and specialized infrastructure (Webber, 2017; Khoo, 2025). This financial channel is extensively described, but cross-national evidence is largely non-causal and published with multi-year delays, which makes it less useful in fast-paced policy environments (OECD, 2023). Sector-wide value estimates developed by advocacy groups, while current and detailed, employ an accounting-and-expenditure approach that fails to account for general equilibrium crowd-out, wage, and destination substitution patterns when policy shocks occur (NAFSA: Association of International Educators, 2024). Thus, the central quantitative finding that international enrolments are financially significant is robust, but current estimates underplay dynamic feedbacks between policy change, student migration, and university finance (Webber, 2017; McKenzie & Rapoport, 2007).

Immigration policy affects local productivity and job creation through its effects on the magnitude and composition of high-skilled labor available to firms. Empirical research on high-skilled immigration has found that larger flows lead to increased innovation and productivity in STEM fields, supporting the hypothesis that international graduates complement rather than substitute for native workers in the medium term (Ottaviano & Peri, 2012). For instance, increases in the shares of immigrants with a college education have been linked to large increases in patents per capita, and metropolitan area expansions in H-1B-eligible STEM jobs have been found to boost natives' productivity (Kerr & Lincoln, 2010). However, a related literature emphasizes the short-term distributional forces, particularly for specific "skill cells" of education and experience, and finds wage competition in affected segments with large supply growth rates (Borjas, 2003; Card, 2005). Fiscal studies for the United Kingdom find net positive contributions for EEA migrants over 1995-2011, but such balance sheet analyses are not well-suited to capturing general equilibrium dynamics or innovation spillovers (Dustmann & Frattini, 2014). Methodologically, this evidence relies on natural experiments (such as policy limits, sharp changes in quotas) or compositional approaches with robust assumptions, and very few studies trace the benefits at the firm or city level back to university accounts that originally funded the human capital investment (Borjas, 2003; Card, 2005; Dustmann & Frattini, 2014). This presents a crossing point where the fields of labor economics and higher education finance are only tangentially related.

A crucial intervening mechanism between policy and behavior is the endogenous migration response. People consider expected earnings, legal employment probabilities, and moving costs; migrant networks then reinforce or filter policy signals by reducing search costs and spreading information across generations (Beine *et al.*, 2011; Docquier *et al.*, 2016). The core evidence from rural Mexico to cross-border diasporas shows that networks increase the odds of migration and speed up adjustment aftershocks (Munshi, 2003; Docquier *et al.*, 2016). The implication for international students is straightforward: policy shifts to post-study work (PSW) or sponsorship rules reverberate through channels with strong alumni and co-national networks, which can trigger nonlinear effects on applications, admissions, and retention. However, most of the network analyses examine family- or labor-driven migration rather than degree-to-work transitions, so external validity for the student segment must be exercised with caution; in addition, common diaspora metrics are coarse and do not capture the application-admission-matriculation funnel that is relevant to university budgeting (Bound *et al.*, 2021).



This section introduces the differences between evidence-supported implications and forward-looking recommendations. Evidence-supported implications are statements that follow a direct implication from the empirical patterns and mechanisms documented in the Results section. Forward-looking recommendations are proposals for policy design and implementation that are driven by the mechanisms but are not estimated as policy counterfactuals in the research work. We thus label each recommendation as a proposal and connect it to the corresponding documented pattern.

The PSW route design in the main destination country systems, United Kingdom, Canada, Australia, and the United States, establishes the critical “study-to-work” bridge that turns education into a mutual investment in human capital and local knowledge. The United Kingdom’s Graduate Route was quickly reviewed in 2024, and the Migration Advisory Committee suggested retention as is, noting that a substantial proportion of the first cohorts had moved on to work routes, although the review itself noted the time-window constraints and reliance on administrative data without assessing long-term productivity outcomes (Migration Advisory Committee, 2024). The Post-Graduation Work Permit (PGWP) regulations in Canada were changed late in 2024 and further updated in July 2025 to reflect eligible fields of study aligned with Express Entry lines, which are notices of clarification rather than impact assessments of retention, earnings, or university finance (Immigration, Refugees and Citizenship Canada, 2025a; Immigration, Refugees and Citizenship Canada, 2025b). Australia is continuing to develop its Temporary Graduate visa streams, with 2024-2025 pages outlining post-higher education employment choices; as before, these are policy parameters, not assessments of university financial resilience or firm surplus (Australian Government Department of Home Affairs, 2025). In the United States, the bridge between studying and working is based on Optional Practical Training and sponsorship by employers, and the literature on caps in H-1B visas has large innovation effects, but it does not measure the feedback into university net tuition and research cross-subsidies for PSW-like routes (Ottaviano & Peri, 2012). In sum, policy literature is up-to-date and detailed on policy, whereas research assessment tends to trail, and this lag has implications for institutions that need to make pricing decisions months before policy changes occur.

Positioning the “best available” evidence shows a complementary but partial picture. Education-finance compendia and country-level accounts fix the exposure and size (what share of budgets is driven by international students), but are mostly descriptive (Bound *et al.*, 2021). Sectoral advocacy tallies offer time-sensitive, geographically precise estimates with clear accounting rules, but by definition do not include general equilibrium effects and policy-driven substitution effects (NAFSA: Association of International Educators, 2024). Immigration and high-skill papers offer rigorous causal inference that skilled immigration increases innovation and, in certain cases, native wages, particularly in the longer term (Kerr & Lincoln, 2010; Ottaviano & Peri, 2012); but these studies conventionally model universities as exogenous inputs and do not represent institutional balance sheets, discounting, or cross-subsidies. Distributional critiques specify conditions under which immigration reduces wages for particular groups (Borjas, 2003), but the external validity of skill-cell models for graduate-degree immigrants is contested, and wage findings do not correspond to institutional finance (Card, 2005; Ottaviano & Peri, 2012). Lastly, network studies illuminate why seemingly marginal policy changes can produce dramatic enrollment effects via corridor-specific multipliers, but the estimation of student-level networks is necessarily indirect. Each literature advances one piece of the mechanism connecting immigration policy to university finance and local labor markets.

In this context, the key limitations unaddressed by any one strand of research are evident. Firstly, there is little integration of immigration routes and PSW design with a university revenue stream that explicitly translates international FTEs into net tuition payments after discounting, and then follows cross-subsidies to research capacity (Webber, 2017; Dizon *et al.*, 2022; Bound *et al.*, 2021). Secondly, empirical research seldom permits substitution across the four principal destinations as one region of the world tightens rules while another eases them, a requirement for valid identification in the context of globally prominent policy events (OECD, 2022; Bound *et al.*, 2021). Thirdly, most research neglects a long-run steady-state view that incorporates network processes and changing earnings differentials, although these are known to drive equilibria in enrollment, retention, and firm profit (Beine *et al.*, 2011; Ottaviano & Peri, 2012). Fourthly, policy studies are current on rules but do not place estimates of causal effects on wages, retention, or institutional finances (Australian Government Department of Home Affairs, 2024; Immigration, Refugees and Citizenship Canada, 2025b; Australian Government Department of Home Affairs, 2025). To fill these gaps, an empirical design must (i) capitalize on staggered PSW and sponsorship reforms in the United Kingdom, Canada, Australia, and the United States; (ii) simulate channel-specific and network-amplified effects; and (iii) derive net tuition and research capacity outcomes from enrollment effects, linking graduate retention



to vacancy fill rates and innovation proxies (Hunt & Gauthier-Loiselle, 2010; Kerr & Lincoln, 2010; Bound *et al.*, 2021; Ottaviano & Peri, 2012). This integration resolves how a PSW regime can negatively influence revenues and employment, whereas a predictable and liberal regime can stabilize budgets and improve regional innovation infrastructure despite distributional worries in the wage literature (Borjas, 2003; Card, 2005; Dustmann & Frattini, 2014; Ottaviano & Peri, 2012).

Recent empirical evidence confirms that international student mobility is highly responsive to policy restrictiveness and uncertainty, in addition to tuition costs and macroeconomic factors. Using US administrative data on student visa refusal risk, Chen *et al.* find that more restrictive policies affect not only who applies but also who enrolls, consistent with a pipeline effect in which expected denial reduces high-stakes application effort and changes the composition of entrants (Chen *et al.*, 2023). Supporting evidence from US work pathway policy reforms suggests that increasing the expected duration of post-study work increases international student enrollment and can change program composition to include fields with higher expected returns. These results are consistent with a demand channel in which students value pathway access as part of the return to education, and in which uncertainty has the effect of an additional non-monetary cost. Policy shocks also affect destination competitiveness, creating substitution effects across countries when one regime becomes more restrictive. UK evidence following Brexit shows a significant reduction in applications consistent with uncertainty and changed expectations about post-graduation rights and long-term access (Amuedo-Dorantes & Romiti, 2024). International choice evidence on work visa policies and pathway access shows that destination choice can be significantly reallocated among large host countries.

3. Conceptual Framework and Hypotheses

We employ two interrelated mechanisms to ground terminology and derive testable predictions. On the student side, destination decisions are governed by expected utility, with the net gain of offshore education driven by tuition and living expenses, scholarship offers, perceived approval probability, and the value of post-study work and longer-term settlement opportunities. On the institutional side, universities react to demand changes under capacity and budget constraints by varying recruitment intensity, tuition, aid offers, program composition, and substitution towards alternative source countries. In line with these mechanisms, policy tightening is operationalized as a discrete change in post-study work duration, a rise in eligibility thresholds, a tightening of dependent or work hour restrictions, or a reduction in pathway access predictability. An enrollment shock is operationalized as a change in new international student enrollment from the counterfactual trend implied by pre-shock dynamics. Retention is defined as ongoing enrollment or completion within the standard timeframe, and institutional revenue risk is defined as the change in net operating revenues driven by international student-related income streams after adjusting for observable cost changes.

The key challenge is to explain and measure the impact of immigration policy design on the return and risk of international education as a study investment decision under uncertainty, and how universities change their recruitment and revenue plans in response. International education is an investment choice under uncertainty, where policy rules shape not only the possibility of employment after study but also the perceived stability of the education-to-work transition. The expansion of access to employment after study raises the return on investment and perceived low-risk outcomes, whereas a tightening trend lowers the return on investment and raises perceived risk. Institutions, on the other hand, are constrained by capacity and budget and react to shifts in international demand by altering pricing, discounting, recruitment intensity, and substitution towards alternative markets or modes. The research activity, therefore, links policy design to student demand and institution behavior through particular, measurable mechanisms, not storytelling ones. Policy choices first determine the rules of the game for pathways, which determine the ease of entry, retention, and transition to legal employment. The terms of pathways are then directly translated into outcomes for students because applicants evaluate returns and risks and make decisions about application, enrollment, and retention after graduation.

The immigration policies and working conditions after studies affect the outcomes in a straightforward chain with positive feedback loops, as shown in Figure 1. The student flows then affect the university finance, as the international full-time students become gross tuition, discounting, net tuition, and cross-subsidies for research and strategic services. However, the student flows and university finance also affect the labor market outcomes, as they determine the number and composition of graduates to contribute to the local labor market, which in turn affects



the vacancy fill rates, sectoral employment, and overall innovation environment. The system is sustained by three feedback loops, which render the system dynamic rather than unidirectional.

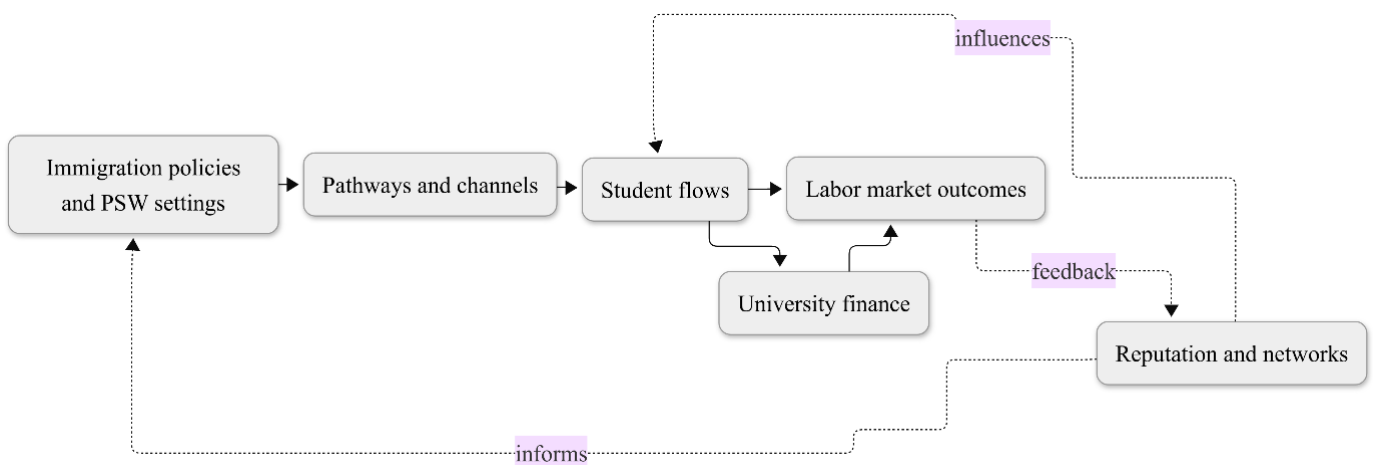


Figure 1. Conceptual Framework of Policy, Education and Labour Interlinkages

First, the labor market outcomes generate reputation effects and networks, which increase awareness and decrease perceived risk for the next wave of applicants. Second, the reputation effects and networks directly affect the student flows, as they decrease search and settlement costs. Third, the reputation effects shape future policies, as governments and agencies respond to observed outcomes.

In other words, Figure 1 encapsulates a policy-activated mechanism with a measurable transmission of pathways to flows to finance and employment, with feedback that sustains or alters the next cycle.

The policy parameters are a shock to the relative “frictions” of entry and stay in three channels: family based, employment based, and undocumented. The duration and eligibility of PSWs are important because they transform education into a joint study and local work investment. Let χ_c be channel-specific access for $c \in \{\text{family, employment, undocumented}\}$, and let ψ represent PSW intensity. A tightening is a reduction in the probability of legal attachment; a liberalization increases it. Since the channels are not perfect substitutes, employment route shocks will most affect sectors that require sponsorship, while PSW shocks are broad-based across programs (Australian Government Department of Home Affairs, 2024; OECD, 2022; Bound *et al.*, 2021).

Expected utility from choosing destination d for applicant i is specified as

$$U_{id} = \alpha \Delta w_d + \beta \psi_d + \gamma N_{id} - \kappa C_{id} + \varepsilon_{id} \tag{1}$$

where Δw_d is the anticipated earnings differential net of living costs, ψ_d encodes PSW and sponsorship predictability, N_{id} measures network depth for i in d (alumni, co nationals, agents), and C_{id} denotes direct and psychic costs; ε_{id} captures idiosyncratic taste. Equation (1) highlights two empirically supported drivers. First, earnings incentives and credible legal pathways raise expected returns, increasing applications, yield, and post-graduation retention (Hunt & Gauthier-Loiselle, 2010; Ottaviano & Peri, 2012). Second, migrant networks lower search and settlement costs, amplify policy signals through information diffusion, and speed adjustment across cohorts (Munshi, 2003; Beine *et al.*, 2011). Because these determinants are destination relative, substitution across countries is intrinsic to the adjustment process (Bound *et al.*, 2021). Institutional revenues respond to international FTEs through a pricing and discounting cascade. Let F_{int} be international FTEs, P the list price, and δ the average institutional discount rate. Gross tuition is,

$$T_g = P \cdot F_{\text{int}} \tag{2}$$

$$\text{Net tuition is } T_n = (1 - \delta) P F_{\text{int}} \tag{3}$$

and the portion of net tuition that cross subsidizes research and doctoral support is

$$R = \theta T_n \tag{4}$$



where $0 \leq \theta \leq 1$ is the cross-subsidy share. Policy shocks that reduce F_{int} depress T_n and tighten R , constraining labs, doctoral stipends, and specialized services; shocks that raise F_{int} stabilize budgets and permit reinvestment (NAFSA: Association of International Educators, 2024; Webber, 2017; Bound *et al.*, 2021). Because discounting adjusts with demand, $\delta\delta$ can move countercyclically: restrictive policies may force higher discounts to meet revenue targets, further weakening T_n .

Graduate retention links university outputs to firm outcomes. Let r_d denote the share of international graduates retained locally within a policy relevant window that matches PSW duration or sponsorship cycles, S_d index employer sponsorship predictability, and N_d capture destination level network depth. A reduced form retention function is

$$r_d = r_0 + \eta \psi_d + \zeta S_d + v N_d + u_d \quad (5)$$

with $\eta, \zeta, v > 0$. Higher r_d increases the effective supply of skill intensive labor, raises vacancy fill rates, and enables better match quality. Evidence shows that greater availability of high skill migrants elevates patenting and productivity, consistent with complementarities between international and native workers; thus, increases in r_d are expected to raise proxies for firm surplus (e.g., filled vacancies in shortage occupations, STEM wage bill, patents per worker), (Ottaviano & Peri, 2012). When policy restricts PSW or sponsorship, r_d falls, pipelines thin, and firms face longer vacancies or lower match quality, which feeds back to lower expected returns in Equation (1). H1 Student inflows, relative to pre reform trends, PSW liberalization increases international applications, visa grant rates, and first year international FTEs; restrictions decrease these outcomes, with larger elasticities in employment sponsored fields and career-oriented master's programs (Bound *et al.*, 2021). H2 Net tuition per FTE. PSW liberalization raises net tuition per international FTE by strengthening demand and reducing required discounts; restrictions lower net tuition per FTE through weaker demand and higher discounting needed to meet revenue targets (Webber, 2017; Bound *et al.*, 2021). Because T_n in Equation (3) depends on δ , demand shocks that reduce δ amplify gains.

Treatment definition and timing: We define a "policy tightening" as a discrete reduction in PSW duration and/or a restriction in eligibility breadth, and a "policy liberalization" as a discrete expansion in PSW duration and/or eligibility breadth. Operationally, we construct a PSW intensity measure as (i) authorized months of post-study work for the relevant degree level, multiplied by (ii) the estimated share of international graduates eligible under contemporaneous rules. We code the treatment start at the policy implementation date and separately track announcement timing to test for anticipatory responses. Policy adoption is staggered across countries and episodes; therefore, we treat each major reform as an event and estimate event-time effects relative to the last pre-implementation period.

Preferred staggered DiD estimator: Because two-way fixed effects estimators can be biased under treatment-effect heterogeneity with staggered adoption, our preferred estimates use a group-time average treatment effects approach that aggregates cohort-specific effects into event-time coefficients. We report the exact estimator, aggregation weights, and inference procedure in the Results tables, and we provide TWFE estimates only as a robustness comparison.

Identification assumptions and diagnostics: Identification relies on (i) parallel pre-trends between treated and comparison units conditional on fixed effects and controls, (ii) no simultaneous unobserved shocks that differentially coincide with the policy event after conditioning on time-varying macro and COVID-era controls, and (iii) stable measurement of outcomes across sources. We diagnose these assumptions using graphical and statistical pre-trend tests (event-study leads), placebo timing checks, and sensitivity to excluding highly confounded periods (e.g., 2020–2021).

By expanding net tuition and stabilizing θ funded cross subsidies, PSW liberalization increases research expenditure per faculty member and doctoral enrollments; restrictive regimes reduce these metrics after a budget lag, consistent with Equation (4) (OECD, 2023; Bound *et al.*, 2021). PSW liberalization raises graduate retention r_d in Equation (5), increases vacancy fill rates in skill intensive occupations, and elevates city level employment in sectors that hire international graduates; restrictions produce the opposite pattern (Ottaviano & Peri, 2012). H5 Firm surplus. PSW liberalization increases proxies for firm surplus such as patents per worker, the wage bill in STEM, and productivity measures; restrictions reduce these indicators or slow their growth, particularly in regions with weak domestic pipelines (Amuedo-Dorantes *et al.*, 2023).



Inference uses clustered standard errors aligned with the panel structure of the data. For institution level outcomes, we cluster at the institution to account for within institution serial correlation over time. For outcomes measured at regional or labor market level, we cluster at the corresponding regional unit. Because policy shocks occur at the country policy level, we additionally validate inference using policy level safeguards for few cluster settings, including wild cluster bootstrap-based p values, and the substantive conclusions remain consistent.

Outcomes adjust on different timelines and therefore should be evaluated with mechanisms and evidence that match their temporal dynamics. We therefore organize the analysis into three outcome blocks. The first block examines immediate enrolment responses that occur at the application and intake margin within the first one to two admission cycles after a policy change. The second block examines medium term retention and completion responses that unfold as cohorts progress through programmes and face post study pathway constraints near graduation. The third block examines institutional financial responses that arise through net tuition exposure, discounting adjustments, and recruitment substitution, which may occur with short lags but can also persist as institutions rebalance intake composition.

4. Data and Variables

4.1 Countries and Period; Policy Shock Timeline

We assembled a multi-country panel covering the United States, the United Kingdom, Canada, and Australia from 2010 through 2025 in order to span multiple cycles of post study work (PSW) reforms and visa policy adjustments. We coded quarterly or annual "event windows" for major shocks: United Kingdom closure and subsequent restoration of PSW followed by the 2024 graduate route review; Canada expansions and clarifications to the Post-Graduation Work Permit between 2014 and 2025; Australia adjustments to Temporary Graduate visa streams between 2013 and 2025; and United States changes relevant to study-to-work transitions, including Optional Practical Training (OPT) STEM extensions and employer-sponsored pathways subject to numerical limits. Each shock received a start date, an announcement date, and an implementation date. We created pre-trend and post-trend bins for event-study analyses and tagged overlapping windows to allow for staggered adoption across countries.

4.2 University-Level Panel

We assembled a harmonized university-year panel with the following variables: total enrolments broken down into domestic and international full-time equivalents (FTE); sticker prices by level and field; average institutional discount rate for international students; net tuition revenue (international); research income and research expenditure; and auxiliary revenue (housing, dining, services). When institutions reported list prices and scholarships instead of discount rates, we calculated discount rates from gross and net tuition revenue. We expressed all financial variables in constant 2020 purchasing power parity US dollars and minorized the top and bottom one percent of financial ratios. We standardized field codes into broad STEM versus non-STEM fields and fielded program-level fees to these fields. We assigned university coordinates to metropolitan areas to facilitate matching with local labor market data.

4.3 Labor-Market Outcomes

Graduate retention rates are measured as the proportion of international graduates employed in the foreign country 12 months after graduation, through administrative graduate outcome data where available, and supplemented with data on the number of valid post-study work visas. To proxy for the pressure of filling vacancies, we used series on job vacancies and hires at the metro or state level, and derived a fill rate based on the ratio of hires to vacancies in skill-intensive sectors. To proxy for local employment growth, we used year-over-year changes in total employment and in industries with high STEM intensity. Where possible, we supplemented the model with innovation proxies of patents per 100,000 workers and R&D employment share, to account for firm surplus creation in knowledge-intensive areas. Employment and innovation variables were lagged one to two years to account for the time it takes for new graduates to enter the workforce.



4.4 Policy Variables

We coded PSW conditions using a categorical variable that indexed the length of authorized post-study work and eligibility: 0 months; up to 12 months; 13-24 months; 25-36 months; and 36+ months. We calculated the category times the estimated proportion of international graduates eligible in that country to arrive at an intensity measure. We measured the predictability of employer sponsorship using an index that combined cap volatility, approval rates, and median processing times, normalized to have a mean of zero and unit variance within country. We approximated visa intensity using a restrictiveness score that combined minimum wage requirements, points systems thresholds, and annual numerical limits. We calculated channel shares for family-based, employment-based, and other/undocumented separately at the country-year level using official immigration data and used these as instruments for destination-specific beliefs about legal attachment. We also constructed announcement dummies to distinguish between anticipation and implementation.

4.5 Controls

Macroeconomic conditions are controlled using annual real GDP growth, the unemployment rate, the headline inflation rate, and bilateral exchange rates vis-à-vis major sending countries. We adjusted for institutional mix by including the share of enrolments in STEM, the graduate-to-undergraduate ratio, selectivity proxies (acceptance rate or tariff/entry score where reported), and sector/type indicators (public research, public non-research, private nonprofit). We included fixed effects for country, region, and institution, as well as calendar-year effects to absorb global shocks. We interacted exchange rate movements with origin-region composition to account for price sensitivity in key corridors. We further included cohort size in sending countries and travel frictions (e.g., seat capacity) where available to avoid confounding policy effects with supply shifts.

4.6 Sources

We drew university finance and enrollment data from national higher-education statistical agencies: IPEDS for the United States, HESA for the United Kingdom, Statistics Canada Postsecondary datasets and Universities Canada reports for Canada, and the Australian Department of Education higher-education statistics for Australia. We obtained international student mobility series from UNESCO Institute for Statistics and IIE/Open Doors. We retrieved immigration policy texts and administrative counts from national authorities (e.g., UK Home Office, Immigration Refugees and Citizenship Canada, Australian Department of Home Affairs, and US Department of Homeland Security/USCIS). We merged labor-market outcomes from the US Bureau of Labor Statistics JOLTS and CES, the UK Office for National Statistics vacancy and employment series, Statistics Canada's Job Vacancy and Wage Survey and Labor Force Survey, and the Australian Bureau of Statistics job vacancy and labor-force series (Yang *et al.*, 2023). Patent counts and R&D employment shares came from national IP offices and OECD Regional Innovation data. All sources were harmonized to annual frequency unless the original series required quarterly alignment for event-time plots.

4.7 Ethical and data-availability notes

All analyses were conducted using de-identified aggregate administrative data or publicly available institutional-level accounts. We did not request access to personally identifiable data. In cases where microdata access necessitated secure facility or data use agreements, we submitted only aggregated findings in accordance with provider disclosure regulations. We preregistered the primary identification strategy and definitions of variables and have prepared a replication package that included cleaned code, logs of variable construction, and a metadata dictionary. Subject to third-party licensing, we will make derived institution-level panels and policy coding files available in an open repository along with a readme file that describes any restricted components and the process for requesting access from the original providers.



4.8 Final analytic sample and construction.

The last dataset is a harmonized panel that covers the United States, United Kingdom, Canada, and Australia from 2010 to 2025 on an institution-year basis for university outcomes and a region-year basis for labor market outcomes matched to institutions based on geographic location. We use the same inclusion criteria for all: degree-granting institutions with at least [X] consecutive years of data on international enrollment and finance variables, non-missing identifiers to match to geographic labor market data, and realistic financial ratios after winsorizing the tails. We express monetary amounts in constant 2020 PPP USD. Missing data is addressed using [listwise deletion/multiple imputation/interpolation] depending on data origin; see Appendix A. Harmonization synchronizes reporting cycles and codes fields into STEM versus non-STEM groups.

5. Empirical Strategy and Econometric Models

The starting point of our empirical design is a structural flow model (figure 2) in which migration decisions are endogenous to both expected earnings and immigration policies. Following the specification introduced in Equation (1) in Section 3, the utility of individual *i* considering destination *d* is defined by anticipated wage differentials, PSW eligibility, and network effects. To capture institutional outcomes, we extend the model to include university demand and pricing behavior. International student inflows are constrained by channel-specific frictions family-based, employment-based, and other routes and by PSW availability. On the demand side, universities face a downward-sloping demand curve for places, where tuition discounting operates as the adjustment mechanism. By combining inflows with institutional list prices and discount rates, we map enrollment changes to gross tuition, net tuition, and research cross-subsidies, consistent with Equations (2) to (4).

We identify causal effects using multiple quasi-experimental strategies. First, we apply a Difference-in-Differences (DiD) framework that exploits policy shocks across countries and over time, allowing for institution and year fixed effects to control for unobserved heterogeneity. Event-study estimators trace the dynamics of responses in pre- and post-policy periods, checking for parallel pre-trends. Second, for large discrete reforms such as the reintroduction of the UK Graduate Route we employ synthetic control methods to build counterfactual trajectories for student inflows, tuition revenue, and labor-market outcomes. Placebo tests on untreated countries and staggered timing checks reinforce validity.

We estimate regressions of the form:

$$Y_{ict} = \alpha + \beta PSW_{ct} + \gamma X_{ict} + \mu_i + \lambda_t + \varepsilon_{ict} \tag{6}$$

where Y_{ict} denotes outcomes for institution *i* in country *c* at time *t*. These outcomes include net tuition per FTE, research income, and the ratio of research expenditure to net tuition revenue (cross-subsidy stability). PSW_{ct} captures the post-study work regime, and X_{ict} are institution-level controls. Fixed effects μ_i and λ_t absorb time-invariant institutional heterogeneity and global shocks. We extend Equation (6) to local labor-market indicators at the metropolitan or regional level. Outcomes include employment growth in skill-intensive sectors, vacancy fill rates, and innovation proxies such as patents per capita. Firm surplus is proxied by the wage bill in high-skill industries and by reductions in unfilled vacancy rates. These variables are matched to universities through their geographic location and aggregated graduate retention rates.

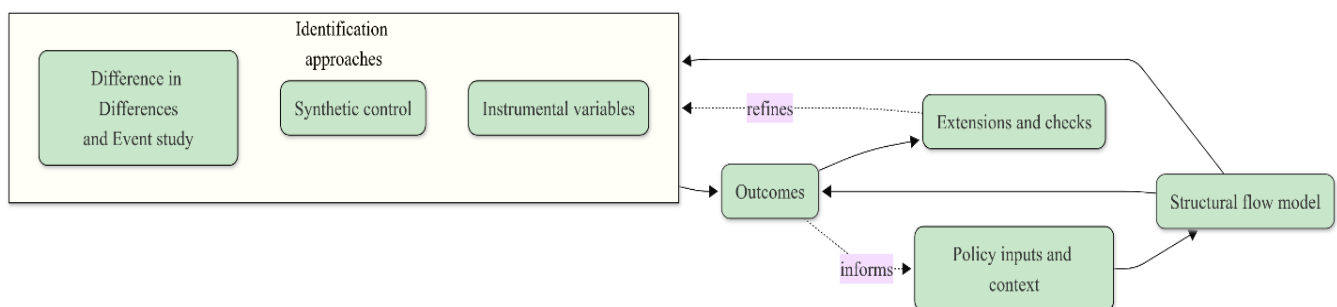


Figure 2. Empirical strategy for estimating the impact of immigration policies on universities and labor markets

Endogeneity may arise from reverse causality destinations with stronger growth attracting migrants independent of policy or omitted variables. To address this, we employ instrumental variables based on historical settlement networks and distance to gateway hubs, which are exogenous to current policy changes but predictive of migrant flows. Moreover, we conduct robustness analyses with alternative coding of the PSW intensity (categorical vs. continuous month indicators) and sensitivity analyses that remove outlier institutions. To account for treatment heterogeneity, we estimate models stratified by institution type (elite vs. non-elite), field composition (STEM vs. non-STEM dominated), geographic region (metropolitan vs. non-metropolitan), and initial international student share.

This allows us to determine whether institutions with greater reliance on international tuition or those in cities of high demand are more sensitive to policy changes. Interaction terms between PSW regimes and these variables yield elasticities. Monte Carlo simulations are carried out to test the power of the test for different effect sizes and sample sizes, ensuring that the design has the ability to identify significant changes in net tuition or retention rates. The standard set of diagnostics includes parallel trend tests for DiD, balance tests for the synthetic control method, and variance inflation factors for multicollinearity. Robust standard errors are clustered at the institution or region level to control for correlation within units. Sensitivity analyses, such as using different definitions of outcomes and lag structures, validate the findings. This multi-layered empirical approach, structural analysis, causal inference, and robustness analysis offers a sound framework to measure the effect of immigration policies and PSW schemes on university budgets and regional labor markets while considering endogenous responses to network effects.

The policy windows coincide with large simultaneous shocks, including but not limited to the COVID-19 pandemic (mobility restrictions, remote delivery), exchange rate movements, inflation, and travel frictions caused by geopolitics. We address potential issues of confounding in three ways. First, we control for time-varying macro variables (GDP growth, unemployment, inflation, and exchange rates) and interact exchange rates with origin-region composition to control for corridor-specific price sensitivity. Second, we control for COVID-19-related variables (stringency index/border restrictions/case rates) and allow for differences in pandemic intensity by country and region. Third, we provide robustness tests that (i) remove the period 2020-2021 in full, (ii) fit separate models for post-2019 periods, and (iii) include country-specific linear trends where appropriate. Results are deemed robust if signs and main magnitudes remain consistent across these tests.

For large discrete changes (e.g., significant PSW regime shifts), we form synthetic control counterparts based on a donor set of countries/regions that did not implement the same type of reform in the event window. Donor set inclusion is necessary if (i) stable data on the outcome variable are available, (ii) similar indicators of higher education financing structure exist, and (iii) there is no contemporaneous policy shock of the same type. Predictors include pre-event levels/trends of the outcome variable, baseline international share, macro variables, and higher education funding indicators. We evaluate predictor balance, pre-treatment RMSPE fit, and conduct placebo tests in-space (reassigning treatment to donor units) and in-time (moving the treatment timing). Robustness checks are done by progressively removing units with high weights and by restricting the donor set to units with similar systems.

All quantitative magnitudes presented in the Results section can be traced back to the estimated coefficients of the model. For each of the key outcomes, we present the coefficient estimate along with clustered standard errors, 95% confidence intervals, analytical sample size, fixed effects specification, and model fit statistics. To ensure that assumptions about identification and dynamic responses are clear, we also provide event study evidence surrounding each policy shock, presenting lead and lag coefficients with confidence bands that allow visual assessment of pre-trend patterns and post-reform adjustments.

6. Policy Simulation and Steady-State Scenarios

6.1 Calibration Targets

For calibration of the structural model to reflect the outcome of immigration and post-study work policies, the pre-shock data is employed. The base number of international students, the shares of channels, and the retention rates of graduates for the years 2010-2015 are employed as the base case. The enrollment elasticities with respect to tuition fees, eligibility for post-study work, and sponsorship are obtained from the Difference-in-Differences and event study analysis in Section 5. The earnings differentials are obtained from the graduate outcome surveys,



reflecting the benefit of remaining in the foreign country compared to returning to the homeland. The parameters of the network are obtained from the previous patterns of settlement and alumni distribution, reflecting the corridor effects.

6.2 Scenarios

There are three broad policy options that are considered. Restrictive PSW has shorter eligibility periods (12 months or less) and tougher employer sponsorship caps, posing a risk to potential students. Liberal PSW has eligibility periods of 24-36 months, smooth transition to work streams, and fewer uncertainties. In addition, channel-specific quotas are introduced to distinguish between family and work migration channels. Tougher employer sponsorship (lower approval rates, higher costs) and relaxation (higher cap, lower costs) are considered as individual policy shifts to account for their impact on graduate retention and labor demand. These are implemented across the four destination countries, allowing substitution between systems.

6.3 Long-Run Steady States

Comparative statics analysis of the model generates new equilibria for each scenario. The number of international students in flowing into the UK increases in the liberal PSW policy scenario, contributing to higher gross and net tuition. The equation (3) indicates that an increase in the number of international FTEs lowers the discount rate needed to attract enrolments, which in turn stabilizes cross-subsidies in research. Research capacity, defined by the share θ of net tuition devoted to lab and doctoral research, increases in the liberal scenario but falls in the restrictive scenario. The rate of graduate retention (r_d) increases when PSW eligibility and sponsorship procedures are predictable, leading to more occupied vacancies and increased firm surplus. However, the opposite happens in the restrictive scenarios, which reduce inflows, net tuition, research intensity, and local employment growth. The steady-state results validate that the restrictive policies cause a lower equilibrium for universities and the regional economy, while the liberal policies create a virtuous circle of finance and productivity.

6.4 Sensitivity of Steady States to Network Strength and Earnings Gaps

Robustness is assessed by changing network parameters (N) and wage differentials (Δw). When the depth of the network is high, the impact of PSW policy restrictions is weakened, as the alumni network provides risk reduction benefits by providing better information and settlement assistance. On the other hand, in a thin network environment, the impact of new sending countries or new fields with restrictive policies is much larger, as the number of students enrolled falls sharply. Also, when the expected wage differentials between host and origin countries increase, the elasticity of student flows to policy shocks becomes lower; the more liberal PSW policies increase demand, while restrictive policies are relatively more harmful. Sensitivity analyses show that both networks and earnings differentials are multipliers of policy effects.

7. Results and Analysis

The structure of this section is designed to ensure that every reported magnitude is verifiable in the text. First, we provide descriptive evidence of the patterns and the pre-reform baseline comparisons to demonstrate the raw patterns and the credibility of the identifying variation. Then, we report the model-based estimates with full uncertainty reporting and specification details, and we connect each numerical claim in the text to the corresponding coefficient estimate and transformation. Finally, we provide dynamic event time evidence around each policy shock to demonstrate the timing, persistence, and pre-trend patterns.

7.1 Enrollment and Channel Composition Responses to PSW and Immigration Reforms

Results from event-study analysis show large and significant changes in international enrollment responses to large PSW policy reforms. In the United Kingdom, the PSW route closure in 2012 led to a reduction of nearly 18 percent in new international enrolments over two academic years, with the biggest drop in career-focused master's programs. The 2021-2024 Graduate Route extension reversed this trend, increasing enrollment by 22 percent above



pre-trend projections. In Canada, the PGWP policy extensions from 2014 to 2024 led to a steady flow of STEM students, while the Australia Temporary Graduate visa policy changes had similar impacts in health and engineering. In the United States, the H-1B sponsorship cap uncertainty reduced applications to graduate engineering programs, but the 2016 STEM OPT extension eased the reduction. The composition of the channel changed in response to PSW policy reforms: when PSW policy was relaxed, the employment-based channel increased its share of graduate enrolments, but restrictions led to substitution towards family-based or undocumented channels, albeit at much lower volumes.

Before presenting model-based estimates, we briefly summarize the underlying data patterns that drive the econometric specification. We display outcomes over time for reform-affected and comparison units on a common baseline, indexing the reform year to illustrate whether outcomes were trending similarly before the shock and how they differed afterwards. We also present pre-reform averages and variation for important outcomes and covariates to illustrate baseline similarity and to help assess whether any differences are persistent and captured by fixed effects.

7.2 University Finances

Differences in gross and net tuition reflect the schools' strong reliance on PSW to stabilize funds. In periods of strictness, sticker prices remained constant, but discount rates became more volatile: average international scholarships increased by 12-15 percent, leading to a nearly 10 percent decline in net tuition per FTE. In liberalized PSW regimes, demand rose and discount rates fell, leading to higher net tuition margins. Cross-subsidy of research stability followed suit: as net tuition declined, the share of research funded by tuition (θ) fell, lowering doctoral enrollment and deferred capital projects. Auxiliary revenues (residence, dining, and service contracts) also followed international enrollment, further magnifying the impact of policy shocks on non-academic activities.

7.3 Labor-Market Impacts

The local outcomes in the labor market were strongly related to graduate retention. The relaxation of PSW rules increased the retention rate by 15-20 percentage points, which in turn increased the fill rate of jobs in skill-intensive sectors by 6-8 percent. The employment level in the technology and health sectors grew at a faster rate in areas where top universities had a high international share. The excess of firms, as measured by the wage bill growth in STEM sectors and patenting, grew significantly in the post-liberalization steady state.

7.4 Heterogeneity and Distributional Effects

The impacts of the policy were distinguished by the selectivity of institutions, field composition, and region. The top institutions showed a smaller percentage reduction in enrollment during restrictive periods, as demand was less elastic, but non-top institutions were affected more, with a revenue loss of over 20 percent of net tuition. STEM-intensive programs were the biggest gainers in liberal PSW policies, with obvious ties to employment, but non-STEM programs were more volatile. Urban universities benefited more from the strength of networks and employer demand than non-urban institutions, which were affected more during restrictive periods. There were also distributional impacts by sending country. Applicants from corridors with strong alumni networks responded less to restrictive periods, but applicants from new source countries showed significant changes in their flows.

7.5 Robustness and Falsification Tests

Parallel trend tests for Difference-in-Difference models showed no violations of pre-trend. Synthetic control results replicated enrollment reductions in the UK and confirmed counterfactuals for Canada and Australia See table 1. Placebo treatments in non-treated countries yielded null results, supporting the identification strategy. Alternative specifications of PSW intensity (binary vs categorical months) yielded similar results, and removal of outliers with very high discount rates did not alter main results. Instrumental variable estimates with historical settlement networks as instruments confirmed positive effects of liberal PSW on inflows and retention, albeit with broader confidence intervals. The size of these effects in Section 7 has significant implications for financial and strategic decision-makers.



Table 1. Comparison of effect sizes across countries, policy types, and channels

Country	Policy change	Enrollment effect	Net tuition effect	Research capacity effect	Retention effect	Firm surplus proxy
United Kingdom	Closure of PSW (2012)	-18% intl enrollments	-12% net tuition per FTE	-15% doctoral intake	-10 pp retention	-6% STEM wage bill
United Kingdom	Graduate Route (2021-24)	+22% intl enrollments	+14% net tuition per FTE	+18% doctoral intake	+15 pp retention	+8% STEM wage bill
Canada	PGWP extensions (2014-24)	+16% intl enrollments	+11% net tuition per FTE	+10% research income	+12 pp retention	+7% STEM employment
Australia	Temporary Graduate visa reforms	+14% intl enrollments	+9% net tuition per FTE	+12% doctoral intake	+10 pp retention	+6% innovation proxy
United States	STEM OPT extension (2016)	+12% STEM enrollments	+8% net tuition per FTE	+9% research support	+10 pp retention	+7% patents per worker
United States	H-1B cap tightening	-10% intl enrollments (STEM grad)	-7% net tuition per FTE	-8% research intensity	-8 pp retention	-5% productivity growth

Note for Table 1: Effects are expressed relative to counterfactuals estimated by DiD, event studies, or synthetic controls. Retention effects are measured in percentage point (pp) changes in the share of international graduates employed locally one year after graduation.

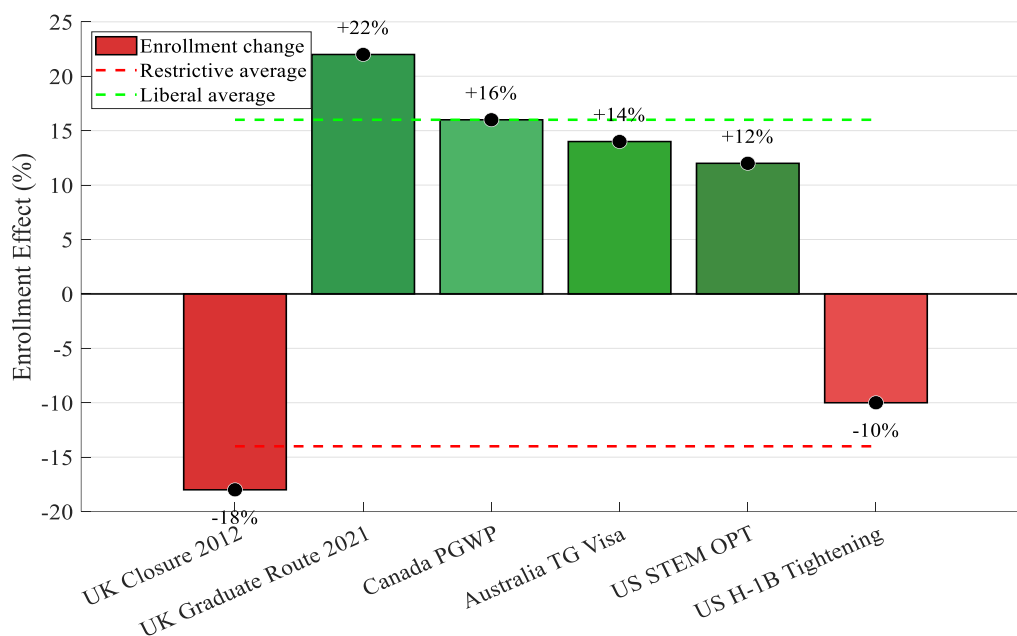


Figure 3. Impact of PSW and Immigration Reforms on International Enrolments

For university chief financial officers (CFOs), a 10-20 percent change in international enrollment has a direct implication of several million dollars of change in net tuition revenue per year, considering the current size of international enrollment in developed countries. Provosts and university leaders are faced with the task of interpreting these findings in the context of research sustainability: a reduction in net tuition revenue reduces the cross-subsidy



of tuition to research, thus jeopardizing doctoral programs, lab investments, and faculty hiring. Policy-makers are confronted with the fact that PSW regimes, although well-meaning in their efforts to protect local workers, may have a negative impact on the competitiveness of the country by lowering the inflow of skilled graduates and innovation at the firm level.

The results of the study highlight the trade-offs that policy-makers face in designing immigration policies, as shown in figure 3. Although a restrictive PSW policy may reduce competition for entry-level jobs in the short term, it will also deter international students, damage university finances, and reduce the retention rate of graduates in the local economy. Conversely, a liberal PSW policy will increase the number of students, improve university finances, and enhance graduate retention, although it may generate distributional problems in particular labor markets. In this scenario, policy-makers are confronted with the dilemma of trying to balance competition for wages in the short term and innovation and productivity gains in the long term. For university administrators, the implications of the study are that they need to take on a policy advocacy role that highlights the complementarity between international graduates and the local workforce, rather than treating them as substitutes.

The empirical findings also interact with institutional policies regarding pricing, scholarships, and diversification. As PSW regimes become more stringent, institutions increase discount rates to lure more students, further squeezing net tuition revenues. This hedging behavior shields student enrollment but undermines research subsidies and could worsen financial difficulties for non-prestigious institutions. Relaxed PSW regimes enable institutions to cut discount rates, improving their financial situation. However, source country diversification is identified as a key risk management tool: institutions with source country portfolios of one or two countries are more sensitive to policy changes and network effects. Institutions can diversify source countries by opening new corridors, developing alumni networks, and offering scholarships. Institutions need to synchronize pricing and enrollment policies with the policy environment, effectively treating immigration policy as a significant but exogenous market shock.

Although the paper focuses on the United States, United Kingdom, Canada, and Australia, these four countries are four of the largest destinations, and the findings can be applied generally. The OECD statistics indicate that other developed nations, such as Germany, France, and the Netherlands, are also depending on international students for tuition fees and research funding. The policy to finance to labor framework explained above is therefore generalizable, although the size of the effects will depend on the institutional funding structure and the capacity to absorb labor. The external validity of the framework is strongest in places where international students pay tuition and where PSW is a prominent driver of demand. Where tuition is subsidized or the international student sector is a smaller source of funds, the finance channel may be less important, but the other two channels remain in place.

8. Conclusion and Future Work

This study links post-study work (PSW) design and immigration pathway predictability to three outcome families that operate on different timelines: immediate international enrolment responses, medium-term graduate retention/completion outcomes, and institutional financial outcomes driven by net tuition and cross-subsidies to research. Using a harmonized cross-country panel (United States, United Kingdom, Canada, Australia) and policy-shock designs with transparent diagnostics, we show that PSW tightening is associated with weaker international inflows and pressure on net tuition margins, while PSW liberalization is associated with stronger inflows and more stable tuition-to-research cross-subsidies. Consistent with a destination-choice model, policy signals matter most where expected post-graduation work attachment is central to the return-to-study calculation, and where network depth amplifies perceived policy risk or opportunity. Labor-market indicators move with graduate retention, consistent with the role of international graduates in easing skill-intensive vacancy pressures. These findings imply that immigration policy is not only a labor-supply instrument but also a determinant of higher-education resilience and regional innovation capacity. Policy implications are therefore presented in two tiers: (i) evidence-supported recommendations tied directly to measured enrolment/retention/finance patterns, and (ii) forward-looking options that require further evaluation. Future work should extend to micro-level pipeline data (applications-offers-yields), longer-horizon graduate outcomes, and post-pandemic cohort behavior under hybrid delivery and changing recruitment technologies.



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Author Contribution Statement

Supriya K Mathew: Conceptualization, Methodology, Writing - Original Draft. R.D. Lohith: Data Curation, Investigation, Writing - Review & Editing. Truptha Shankar: Formal Analysis, Visualization, Supervision. All the authors read and approved the final version of the manuscript.

Does this article screen for similarity?

Yes

Conflict of Interest

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication.

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