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The Economic contribution of International Students in Higher Education in the United States - A review

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Abstract:

The main objective of this research paper is to analyze the economic contribution of international students in higher education to the United States economy. International students are contributing significantly to their colleges and universities, local communities, state, and country's economy. The five major revenue resources for higher education in the United States are from tuition fee, federal grants, state and local grants, private gifts, and investment returns. Tuition revenue is continuously increasing in higher education since 1987. Revenue per student in 2013 in higher education from student tuition fee was around \$9300, from state and local bodies it was \$850 and from federal agencies \$5600 (source: author's calculations from Delta Cost Project data). The international student's share is 56% of the total tuition revenue. International students' tuition is paid by their family or by their home country. Scholarship, aid, or donations contribute little to their enrollment in US institutions. Thus, the financial contribution of international students in the US educational sector is very important. Also, examining the reason behind the decline of the international students' enrollment in higher education during the period 2017-2019 is worthwhile. According to the 2017 open door report on international educational exchange data released by IIE and the U.S. Department of State Bureau of Educational and Cultural Affairs, the growth of international students in the United States declined from 6.3% to 5.5% in the above period.

Keywords: Indian students, financial contribution, US Higher Education, Growth rate.

Methodology:

The findings in this research study are supported by the economic contributions, enrollment data, and jobs supported over a ten-year timeframe data. The major data sources have been US census (2009 – 2017), US Government Data, authentic websites and published research papers. The data sources are reviewed and analyzed to draw conclusion with the help of graphs and tables.

International student enrollment data is provided by Open Doors, published by the Institute of International Education in partnership with the Bureau of Educational and Cultural Affairs, U.S. Department of State.

Literature Review

The growing international student market has attracted new competition from established colleges and universities all over the world. The United States is on top with total of one million international students in the United States for the academic period 2018-2019. The USA is a favorite destination for thousands of young international students to add a foreign degree to their curriculum vitae. Since 2018 international student enrolments are decreasing in the United States. According to the Institute of International Education (IIE) report, 1 million international students were enrolled in 2018-2019 and 782,707 in 2019- 2020. Since 2018 the enrollment of international students is continuously decreasing (IEE-2019).

Between 1987 and 2003 in the public schools most of the revenue resources were from the federal and state governments and in the private higher education sector the major income source was from tuition. The level of tuition revenue per student at private institutions in 1987 was substantially higher than the public institutions in 2013. The value at private institutions was \$20,000 per student and at public institutions it was \$9300 in 2013. International students are contributing to the major portion of the tuition revenue. The NAFSA estimated that international students' economic contribution increased from \$2.4 billion to \$40 billion between 1987 and

2013. California and New York were on top with more than \$5 billion in revenue. (Source: Institute of International Education Open Doors Report, 2015)

According to the National Foundation for American Policy (NFAP), nearly 1 out of 4 US billion dollar startup companies were established by international graduating students. These startup companies created more than 1,400 jobs per company. Also, in 75 of the 91 companies, at least one international graduating or immigrant was in charge of a key management position, such as CEO, Chief Technology Officer (CTO), and Vice President (Study International Staff, 08 Nov 2018)

3.9% of undergraduate students' fees had been paid by their families and the rest relied upon a foreign government or university, a foreign private sponsor, and others. At the graduate level, 60.7% get international funds, 36.5% get funds from their college in the U.S. Most of the money spent by international students (about 55%) is spent within the higher education sector. International students' tuition helps colleges to support high-tech academic programs, and also, helps to keep tuition lower for students from the U.S. After subtracting all funding from U.S. sources, analysis found that international students still contributed US\$38.7 billion to the U.S. economy in 2019. These dollars supported 415,996 American jobs. Also, consider that 18% of every dollar spent by international students goes to apartment rentals and other forms of accommodation; 11% goes to restaurants, 9% to retails, and the rest to other sectors of the economy. No matter how you slice the data, the fact remains that international students make positive contributions to the U.S. economy. 1 out of 4 \$1 billion startup companies in the U.S. had a founder who first arrived on a student visa.

According to the United Nations Educational, Scientific, and Cultural Organization ([UNESCO, 2018](#)) report the total number of international student population was over 5.3 million in 2017 and in the United States the total international students population was 1,043.839 million. More than half of them were from the United States of America, the United Kingdom, Australia,

France, Germany, and Russia. Outstanding sending countries of international students were from China, India, Germany, South Korea, Nigeria, France, Saudi Arabia, and several Central Asian countries. Since 2018 the International students' enrollment is decreasing

Table 1 –The Economic Benefits of International Student Enrollment in the United States - A Ten-Year Trend

Year	International Students number	Job Support	Economic Contribution in USD
Fall 2007	623805	238,649	15,543
Fall 2008	671616	262,459	17,656,746,727
Fall 2009	690901	288,641	18,775,610,942
Fall 2010	723727	290,735	20,231,793,355
Fall 2011	764495	294,699	21,806,604,581
Fall 2012	819644	313,690	23,995,610,641
Fall 2013	886052	340,004	26,729,931,533
Fall 2014	974926	373,380	30,470,654,497
Fall 2015	1,043,839	400,812	32,797,331,691
Fall 2016	1,078,822	450,331	36,864,659,607
Fall 2017	1,09,3448	455608	39,000,586,343
Fall 2018	1,094,032	458,290	40.478,115.759.00
Fall 2019	1,074,215	415,990	38,685,062,256

https://www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-student-economic-value-tool-v2#trends_reports

International students contributed \$40.47 billion to the U.S. economy in 2018-2019 and \$38.7 billion in 2019-2020. The first time in the America's higher education history it is dropping (Table 1). According to the U.S. Department of Commerce the income is from tuition, fees and living expenses. Creating job opportunities, and starting the billion dollars companies and paying

income tax is not included. The number of International students in the USA has grown five times from 1997-98 to 2015-16.

International students in USA-their primary source of funding

Table 2 -International students in USA-their primary source of funding

Sources	% 2013-14	% 2015-16	% 2018-2020
Personal and family	64	66.5	56.23
US college and University	22	17	17.0
Foreign government and university	6	7.4	3.53
Current Employment	5	6.6	21
Foreign Private sponsor	1	0.9	0.60
US government	1	0.4	0.17
US Private sponsor	1	0.3	0.24
International Organization	0	0.2	0.08
Other Sources	1	0.7	1.07

Sources: <https://www.envisageinternational.com/blog/2013/03/12/understanding-primary-sources-of-funding-for-international-students/>

From table# 2, it is clear that for international students in USA major source of funding is personal and family sources which is helping American students to lower their tuition fees. Also, the presence of international students creates a competitive environment, which helps to improve the academic quality in the higher education.

Table 3 Top 20 schools with International Students shareat (in percentage)

New York University	13.18
University of Southern California	12.33

Columbia University	11.51
Arizona State University	11.33
University of Illinois - Urbana-Champaign	11.22
Northeastern University	10.56
Purdue University -	10.23
University of California - Los Angeles	10.21
Michigan State University	8.15
University of Washington	8.04
Boston University	7.86
Penn State University - University Park	7.73
University of Michigan - Ann Arbor	7.42
Ohio State University	7.12
University of Texas - Dallas	7.06
Indiana University - Bloomington	7.01
University of Minnesota	6.98
University of California - Berkeley	6.87
SUNY University at Buffalo	6.85
Texas A&M University	6.69

Resources: h

<https://in.usembassy.gov/u-s-hosts-million-international-students-second-consecutive-year>

International students add diversity to a college or university, enriching the experience of other students on campus. Schools with a strong global presence often have a wealth of cultural groups and events, allowing international students an opportunity to share their food, music and traditions with their U.S. peers. Based on Table # 3 close to 60 % of the international students are with New York University, University of Southern California, Columbia University, Arizona State University, and University of Illinois - Urbana-Champaign. We can notice the impact of the presence of international students in Table # 4, 5, and 6.

Table 4 Country of Origin: Immigrant Founders of Billion Dollar Startup Companies

COUNTRY	NUMBER OF ENTREPRENEURS
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Canada	9
Israel	9
India	8
United Kingdom	7
China	6
Germany	4
France	3
Ireland	3
Russia	3
Australia	2
Ukraine	2
Armenia	1
Bulgaria	1
Denmark	1
Iraq	1
Italy	1
Lebanon	1
Netherlands	1
NewZealand	1
Norway	1
South Africa	1
Sweden	1
Uzbekistan	1
Vietnam	1

Sources:<http://nfap.com/wp-content/uploads/2018/10/2018-BILLION-DOLLAR-STARTUPS.NFAP-Policy-Brief.2018>.

COUNTRY OF ORIGIN Immigrant entrepreneurs in billion-dollar startups are diverse, hailing from a total of 25 different countries, more than the 21 countries in the 2016 report. The leading countries of origin for the immigrant founders of billion-dollar companies are Canada and Israel with 9 immigrants each, India (8), the United Kingdom (7), China (6), Germany (4), France (3),

Ireland (3), Russia (3), Australia (2), Ukraine (2) and 14 other countries with one entrepreneur each from Armenia, Azerbaijan, Bulgaria, Denmark, Iraq, Italy, Lebanon, the Netherlands, New Zealand, Norway, South Africa, Sweden, Uzbekistan and Vietnam.

Table 5 International Students Who Became Founders of Billion-Dollar Companies

NAME	UNIVERSITY/DEGREE	COMPANY CO-FOUNDED/FOUNDED	EMPLOYEES	VALUE OF COMPANY
Noubar Afeyan	MIT, Ph.D. Biochemical Engineering	Moderna Therapeutics	645	\$7.0 Billion
Ash Ashutosh	Penn State, M.S. Computer Science	Actifio	400	\$1.1 Billion
John Collison	Harvard	Stripe	1,100	\$20 Billion
Patrick Collison*	MIT	Stripe	1,100	\$20 Billion
Nicolas Desmarais	Amherst, B.A. Economics & Pol. Sc	AppDirect	700	\$1.0 Billion
Louay Eldada	Columbia University, B.S., M.S., Ph.D., Electrical Engineering	Quanergy Systems	250	\$1.6 Billion
Borg Hald	Stanford, MBA, U. of Michigan, B.B.A	Medallia	1300	\$1.3 Billion
David Hindawi	U.C.-Berkeley, Ph.D. Oper. Research	Tanium	750	\$3.5 Billion
Arvind Jain	Univ. of Washington, M.S., Comp. Sci	Rubrik	1200	\$1.3 Billion
Tomer London	Stanford, M.S. Electrical Engineering	Gusto	600	\$1.1 Billion
Soham Mazumdar	Univ. of Illinois, Urbana Champaign, M.S., Computer Science	Rubrik	1200	\$1.3 Billion
Elon Musk	Univ. of Penn., B.A., Econ &	SpaceX	7000	\$21 Billion

	Physics, Wharton School, B.S. Business			
Adam Neumann	CUNY Bernard M Baruch College	WeWork	6000	\$20.2Billion
Dhiraj Rajaram	Wayne State, M.S. Computer Engineering, Univ. of Chicago, MBA	Mu Sigma	3500	\$1.5 Billion
Daniel Saks	Harvard, M.A. Finance & Accounting	AppDirect	700	\$1.0 Billion
Mario Schlosser	Harvard, MBA	Oscar HealthInsurance	850	\$2.7 Billion
Eric Setton	Stanford, Ph.D. and M.S. Electrical Engineering	Tango	500	\$1.0 Billion
Bipul Sinha*	Wharton School, MBA	Rubrik	1200	\$1.3 Billion
Vlad Tenev	Stanford, B.S., Math	Robinhood	250	\$5.6 Billion
Ragy Thomas	NYU, MBA	Sprinklr	1400	\$1.8 Billion
Andrew Thompson	Stanford, M.A., Education	Proteus Digital Health	300	\$1.1 Billion
Arean van Veelen	Univ. of Washington, Software Product Management, Ferris State Univ., ISM	OfferUp	240	\$1.2Billion
Renaud Visage	Cornell, M.S. Engineering	Eventbrite	900	\$1.0 Billion
Tianyue Yu*	Cornell Univ., Ph.D., nanotechnology	Quanergy Systems	250*	\$1.6 Billion
Michelle Zatlyn	Harvard, MBA	Cloudflare	715	\$1.0 Billion

Sources: <http://nfap.com/wp-content/uploads/2018/10/2018-BILLION-DOLLAR-STARTUPS.NFAP-Policy-Brief.2018>.

INTERNATIONAL STUDENTS AS ENTREPRENEURS:- Entering the United States as an international student has shown to be a good avenue for both immigrants and America for starting successful U.S. companies. Nearly one-quarter (20 of 91) of the billion-dollar startup companies had a founder who first came to America as an international student. Cloudflare's Michelle Zatlyn has noted obtaining Optional Practical Training was crucial to the company's founding. Today, Cloudflare has 715 employees.

Conclusion:

International students' economic contribution is \$40 billion which is 2% of the United States GDP. Furthermore, they are contributing US economy through their, innovation, entrepreneurial actions and creating job opportunities to support the US economy.

Recommendations

The US State Department continues to promote study here through its Education offices around the world.

The Higher education institutions need to increase their funding to support international students since international students' contributions to the economy is significant.

The HBCU institutions need to intensify their recruitment of foreign students also. The first Historically Black Colleges and Universities (HBCUs) was established in 1868 and now is 101 HBCUs. HBCUs playing a very important role of educating black Americans and 70% of the low income families. In 2015 HBCU's almost 73% revenue was from federal or state governments. (Source: National Center for Education Statistics, Integrated Postsecondary Education Data System*Includes investment income such as interests on endowments.)

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The Delta Cost Project has conducted a number of original analyses of higher education finance in the United States. These analyses, as well as the Delta Cost Project data, can be found at <http://www.deltacostproject.org>.

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