



# International higher education student flows

Better understanding the global picture

AIEC | October 2019

nous

20 YEARS OF  
INFLUENCE

# We would like to thank our funders and data collaborators for supporting the project



**Australian Government**  
**Department of Education and Training**

This project has been facilitated by the Australian Government through the Department of Education and Training.

The Enabling Growth and Innovation grant supports the National Strategy for International Education 2025, through \$3 million year to deliver big picture projects that develop Australia's role as a global leader in education, training and research.

The following global agencies have provided us support to date:

- Department of Education, Australia
- Statistics Canada
- Higher Education Authority, Ireland
- Higher Education Statistics Agency, UK
- German Centre for Higher Education Research and Science Studies
- Council on Higher Education, South Africa
- Campus France

The project is being delivered through a collaboration between Navitas, Nous Group and Austrade



Australian Government

Australian Trade and Investment Commission

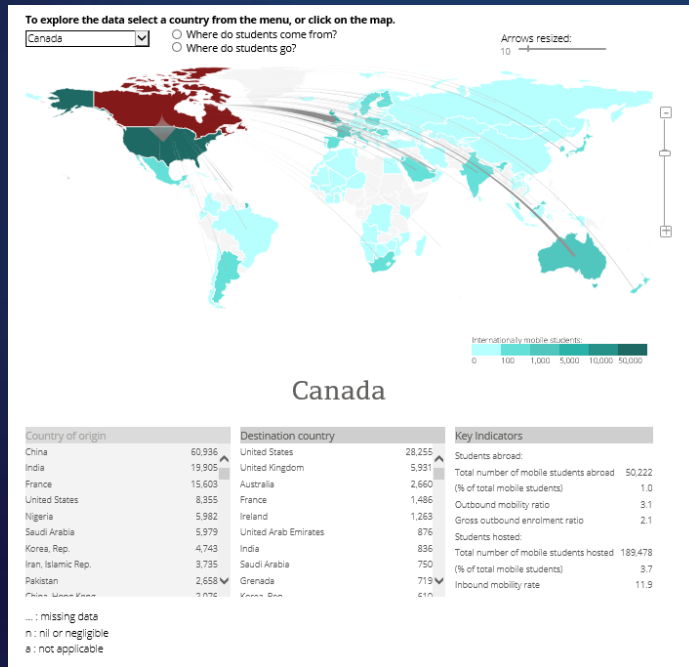
Navitas is a world leader in developing and providing educational services and learning solutions with locations throughout Australia, North America, Europe, Africa and Asia.

Nous Group is an award-winning management consulting firm with over 350 people across eight locations in Australia and the UK. Nous is an expert in higher education and international education.

Austrade is the Australian Government's trade, investment and education promotion agency. It supports Australian education providers market intelligence, in-market support and thought and policy leadership.

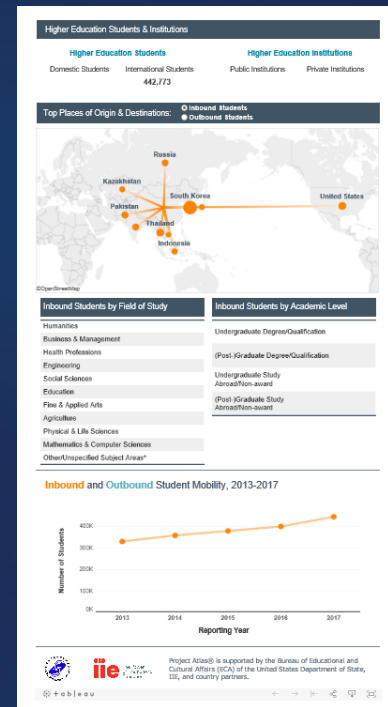
# The project builds on existing work and research in this area

Key existing resources that we have built upon include:



## UNESCO

Which collects and reports global flows of international students between countries



## PROJECT ATLAS

A global research initiative that collects and disseminates comparable student mobility data for participating countries

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## QUESTION 1

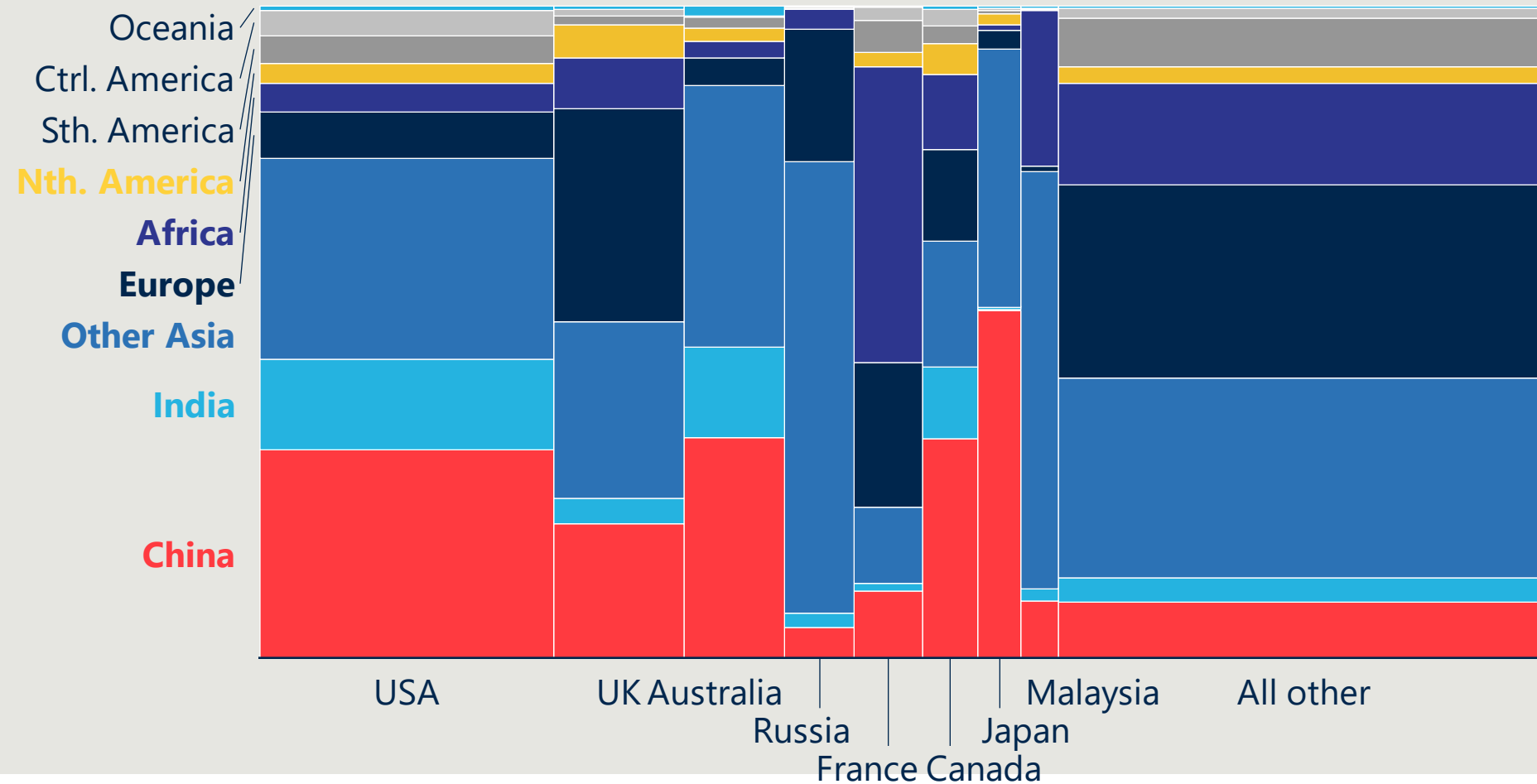
There were around 5.2 million international students globally in 2016 – what proportion came from China?

A. 10%

B. 20%

C. 30%

# Key source country to key destination country flows make up a large share of all identified global student mobility



Global flows from **China to other countries** make up twenty percent of all student mobility and five of the top six global student flows.

Asian enrolments to the top three make up almost a third of all flows.

Source: Nous global student flow integrated dataset Layer 1, based on modelled UNESCO student mobility data.

## What were the objectives for this project?

Our Australian Government EGI grant project has three objectives:

To develop a tool to integrate significant international education data to understand country specific trends and reconcile/seek to explain any discrepancies across sources

1

To understand macro trends in the global higher education market, painting a clear picture of student mobility in higher education

2

To identify drivers of trends in key source country/destination country relationships.

3

## Data availability and consistency has been a barrier for the project

The initial focus of the project was on engagement with global data agencies to access data, which provided a number of responses



**THE DATA IS  
AVAILABLE AND CAN  
BE PURCHASED  
BY ANYONE**



**THE DATA IS AVAILABLE  
AND CAN WE CAN  
SUPPORT YOU WITH A  
TAILORED REQUESTED**



**THE DATA IS  
AVAILABLE, BUT  
CANNOT BE SHARED  
FOR PRIVACY REASONS**



**THE DATA IS NOT  
AVAILABLE OR NOT  
COLLECTED IN THAT  
FORMAT**

This has made bottom up matching as was initially planned by the project not possible.



# Consistency of student or enrolment data also varied significantly across key destination countries

**What we were trying to improve...**

## GRANULARITY

More detailed information on students than current to country flows.

**What we were able to do...**

Information on the variables listed are not consistency available for all (major) destination countries.

## CURRENCY

Providing more recent data reducing the lag in understanding trends.

Up to date data is not possible. Not all key destination countries have internal access to information within 12 months.

## RESOLUTION

Clarification of discrepancies across key data sets.

Inconsistencies and discrepancies across data sets occur due to different definitions. These are being identified and recorded through the course of the project.

# Inconsistent data means that we had to take a different approach to integration

## LAYER 1

### Macro student mobility flows in tertiary education

#### What is available?

Information on source country and destination country over time (2004 to 2016)

#### Data source

UNESCO Global Student Mobility data

#### Data type

Tertiary Ed student numbers  
Various integrated sources

There were **112,300 Chinese** students studying in **Australian** in 2016

## LAYER 2

### Publically available student numbers

By field

By level

#### What is available?

Includes further information by level of study (PG or UG) **OR** field of study

#### Data source

Project Atlas country reported data

#### Data type

Higher Ed student numbers  
Various integrated sources

**64,000** of these are studying **Business** (minor reported difference – 114,000)

**52%** are studying at **UG level**

## LAYER 3

### Country specific data sources

High level

Detailed level

#### What is available?

Macro student mobility flows in tertiary education

#### Data source

Country specific reported data sources, including: UK (*HESA*); Australia (*MIP/HEIMS*); US (*Open Doors, publicly available*); Ireland (*HEA provided data*); Germany (*DAAD provided data*); South Africa (*HEIMS provided data*)

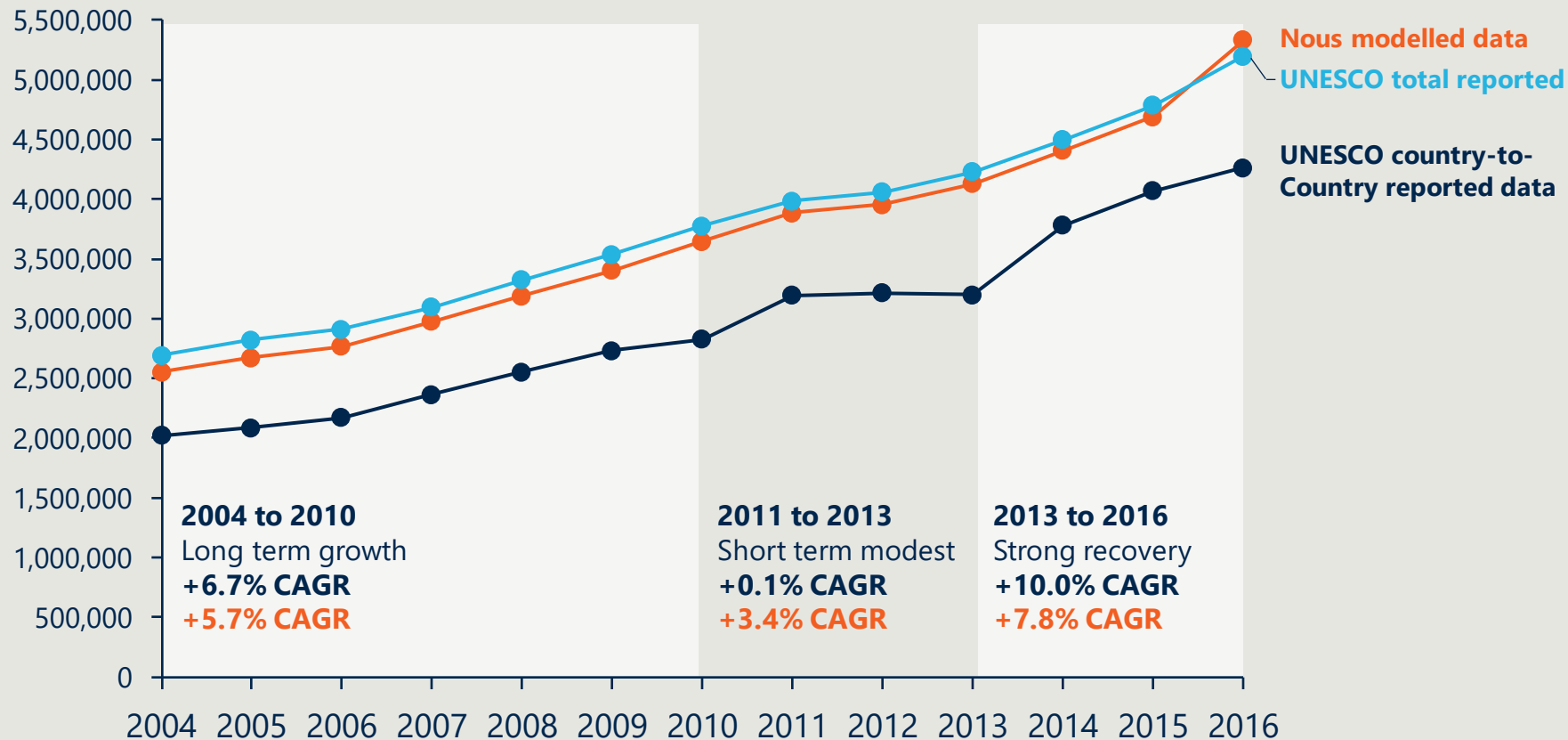
#### Data Type

Visa reported data  
(some enrolment reported data has been used if required)

These students are highly concentrated at **Go8 universities** in **Melbourne & Sydney**.

# Initial integration has addressed gaps that exist in UNESCO's reported global flows

Total number of students studying overseas, 2003 to 2016



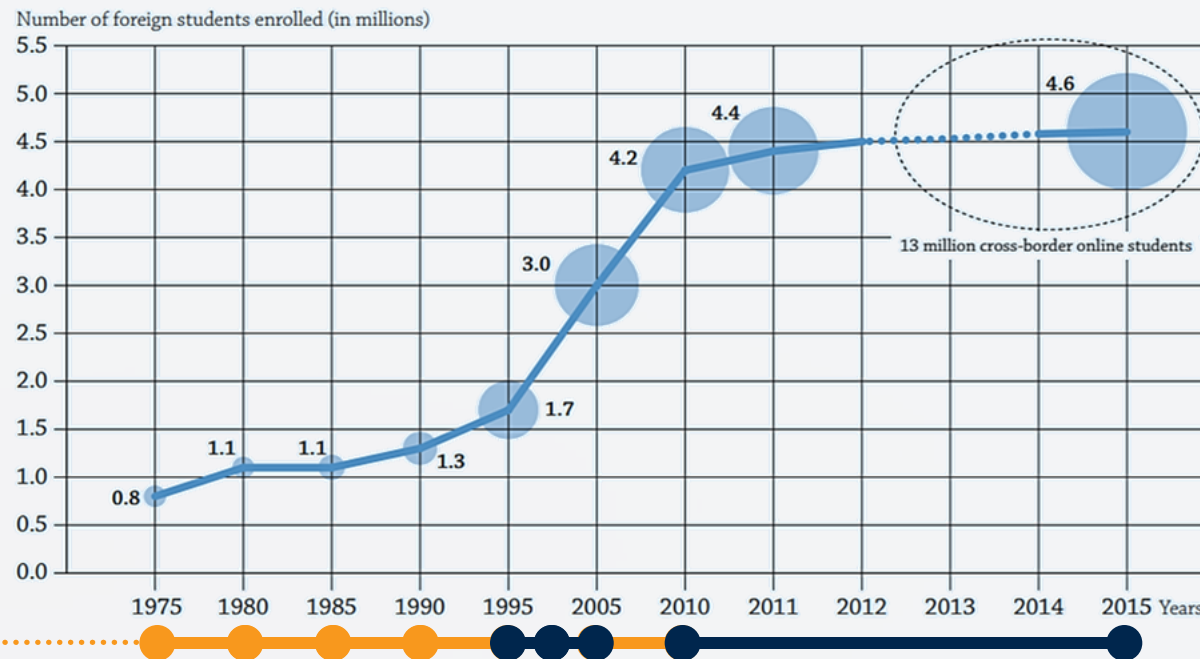
This represented a gap of around 12% based on non-reported data

Source: UNESCO Tertiary student mobility. Note: China (as a destination country) reported figures were included in the UNESCO reported data, but information was not presented on the relevant source countries.

# Differences also exist across the OECD and UNESCO data based on definitional differences

**Figure C4.a. Long-term growth in foreign enrolment in tertiary education worldwide, 1975-2015**

*Total foreign students enrolled in tertiary programmes, whole world (millions)*



Space between  
two dots  
represent  
5 years  
(Nous addition)

- **Foreign students:** do not have citizenship of the country in which they studied (e.g. studying on working visa)
- **International students:** moved to another country for the purpose of study. (i.e. student visa)

For example UNESCO reports a total of 2.8 million international students in 2005, while OECD reports 3.0 million students in 2005.

Source: 1 OECD charts a slowing of international mobility growth, ICFE Monitor (2017) <http://monitor.icef.com/2017/09/oecd-charts-slowing-international-mobility-growth/>

## Following initial analysis principles were used to inform selection of three 'deep dive' case studies

Four principles were utilised...

- RELEVANCE
- NOVEL
- TIMELY
- ANALYTICAL FOCUS

...to determine three case study topics.

- 1 Understanding the **maturity of destination countries** and the drivers for emerging destinations
- 2 Understanding global product preferences for **key source countries** and the impact on global mobility
- 3 Understanding the impact of **country-specific policy responses** on student mobility

Understanding the **maturity of destination countries** and the drivers for emerging destinations

# The first case study focuses on emerging destination countries in the international education system

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## What we already know

There are a number of emerging destinations in the global international education system.

Some of these emerging destinations (such as China, Malaysia, Russia and Canada) are growing at a faster rate than most established destinations (US, UK and Australia).

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## What is the focus of the research

Identifying which destination countries are emerging

Understanding the drivers behind recent growth trends in key emerging countries

Determining the implications for Australia

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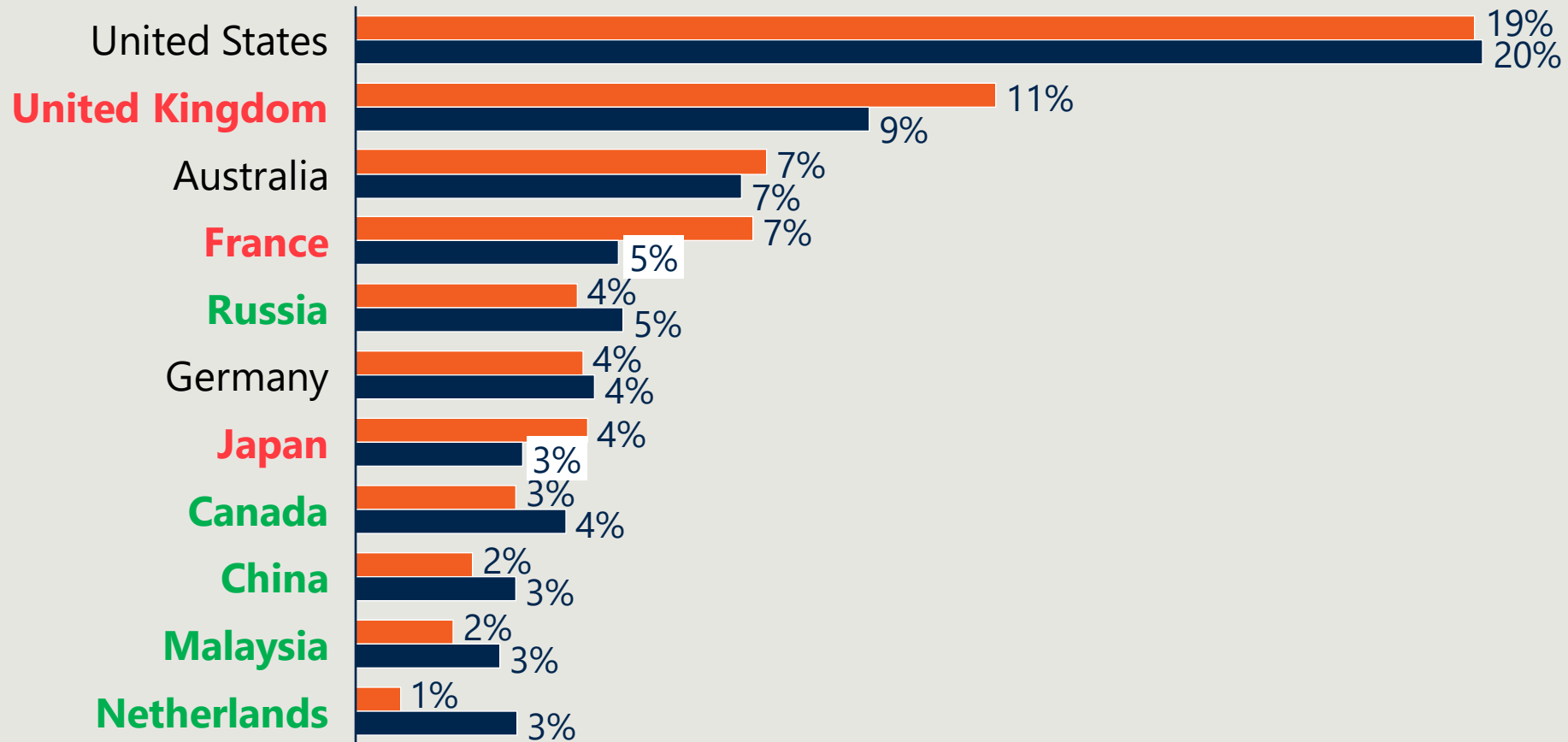
## QUESTION 3

What destination country has had the largest increase in market share?



# The USA, UK and Australia are dominant destination countries, but new countries are emerging

Total number of international tertiary students studying in destination country, 2003 to 2016



The UK and France have experienced declining share, while competitors such as Russia, Canada, China and Malaysia have increased theirs

2010  
2016

Increase in % global students  
Decrease in % global students

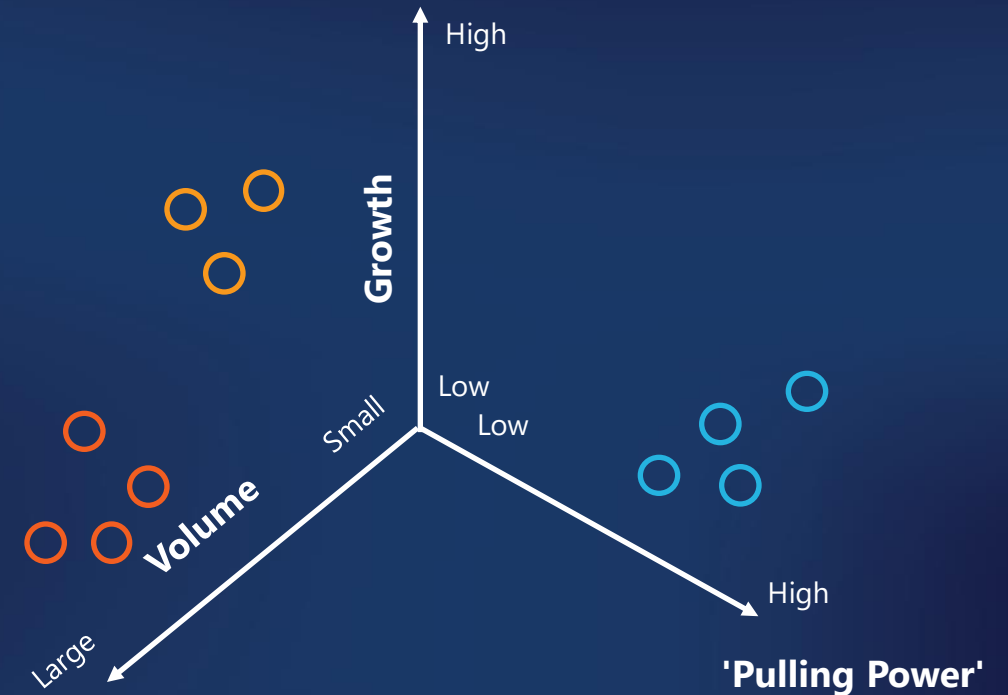
Source: Nous global student flow integrated dataset Layer 1, based on modelled UNESCO student mobility data.

# While the sector typically considers major destination countries based on size, we adopted a novel three-dimension maturity assessment to classify countries

We ran a cluster analysis on three factors related to destination countries...

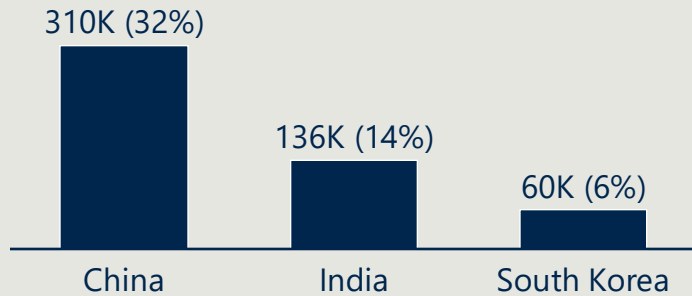
- **Volume** – how many students studied there in 2016
- **Growth** – increase in student numbers from 2011 to 2016
- **'Pulling Power'** which accounts for the nature of where students come from

...to provide a more holistic view of different 'clusters' of destination countries globally.



# 'Pulling Power' provides an assessment of the destination country based on their student profile

The international students that USA attracts ...



out of a total of 971K students.

## Case study | China to USA

'Pulling Power' – **92 (High)**

1. **Geographic distance** – **11,647 km**
2. **Cultural distance** – (**39%\*** across six dimensions)

This makes USA an **'high Pulling Power'** destination country

... are more diverse than the international students Russia attracts.



out of a total of 244K students.

## Case study | Ukraine to Russia

'Pulling Power' – **22 (Low)**

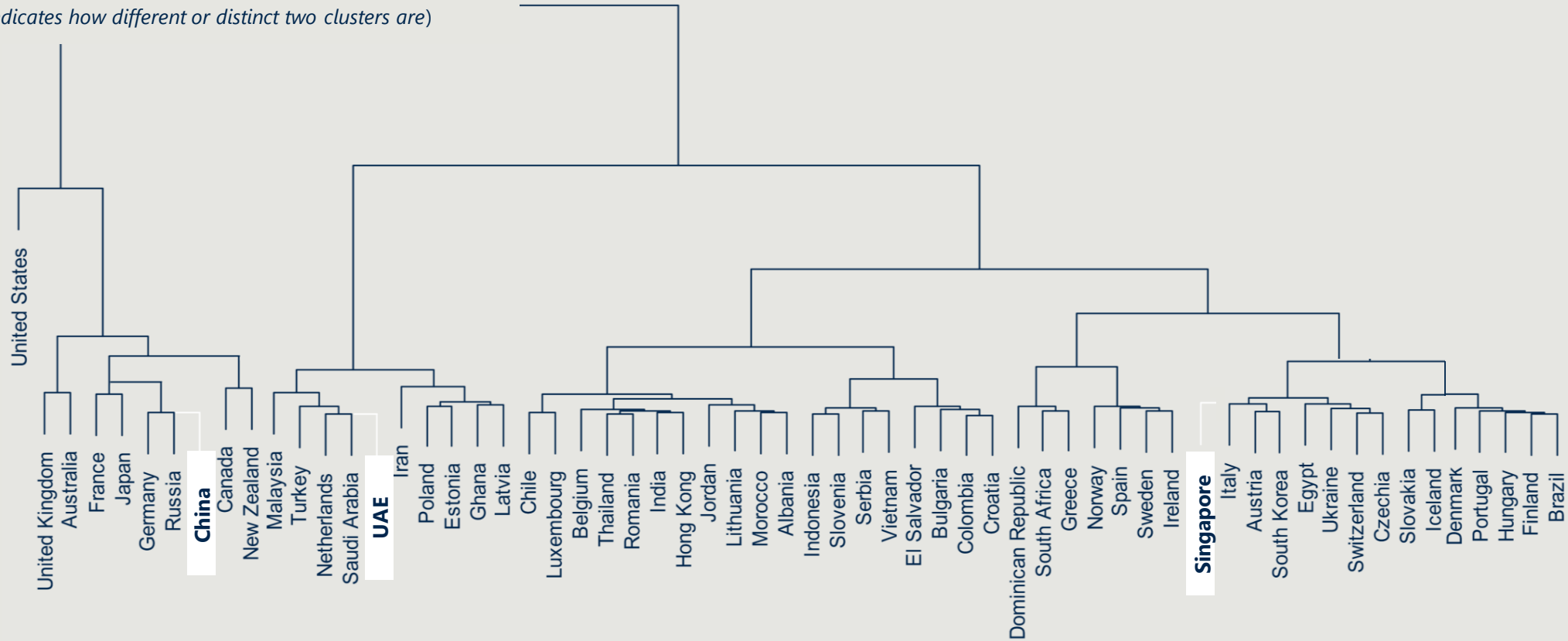
1. **Geographic distance** – **4,666 km**
2. **Cultural distance** – (**9%** across six dimensions)

This makes Russia a **'low Pulling Power'** destination country

# The clusters analysis groups together the countries that are 'most similar'

## Destination country cluster analysis\* based on volume, growth (3 year CAGR) and 'pulling power'

Height (indicates how different or distinct two clusters are)



Major destination countries

Promising

Other destinations

# Six clusters of destination countries are identified, three of which we have classified as emerging

## A. Major destination countries

1. **Established** destination countries

United States  
United Kingdom  
Australia

2. **Mature** destination countries

France  
Japan

3. **'Next wave'** emerging destination countries



Canada  
New Zealand

4. **'Latent'** emerging destination countries



Germany  
Russia  
China

## B. Fast growing destination countries

5. **'Promising'** emerging destination countries



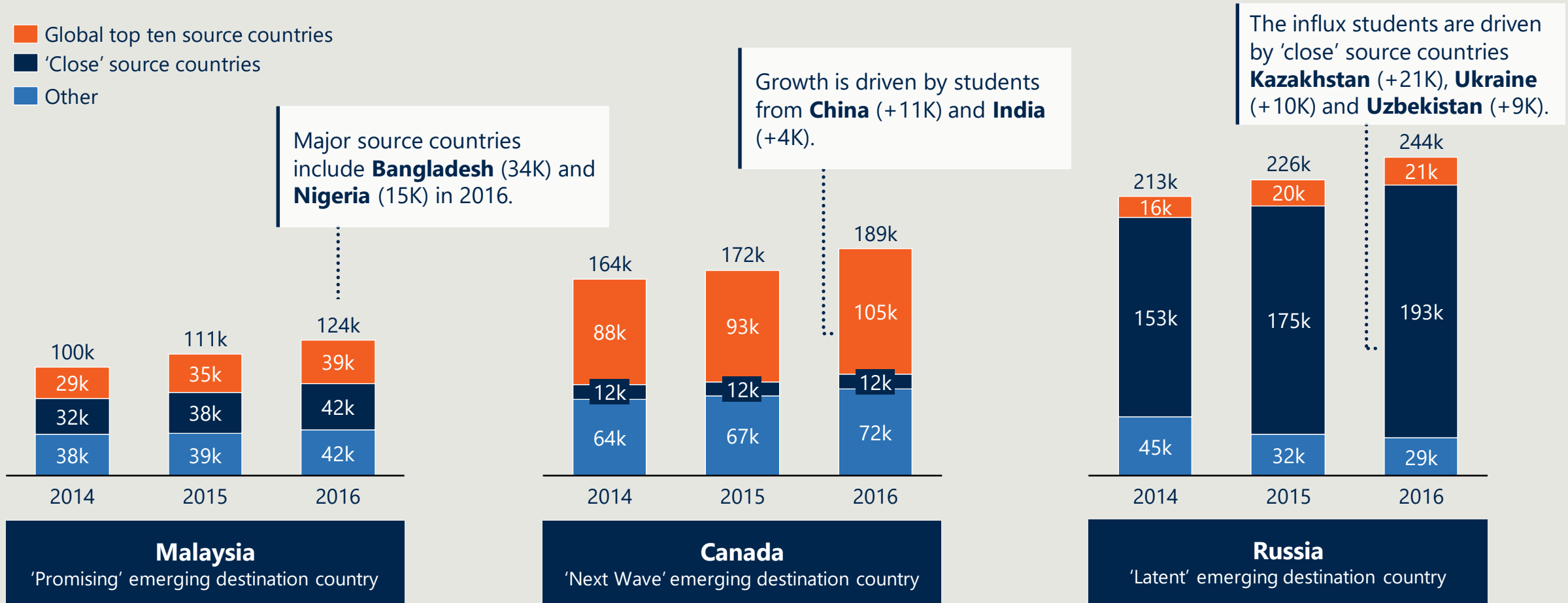
Malaysia  
Netherlands  
Turkey  
Saudi Arabia  
UAE

## C. Junior destination countries

6. All other destination countries – which attract less students, have lower 'pulling power' and/or are experiencing lower growth.

# Emerging destination countries are driven by different categories of source countries

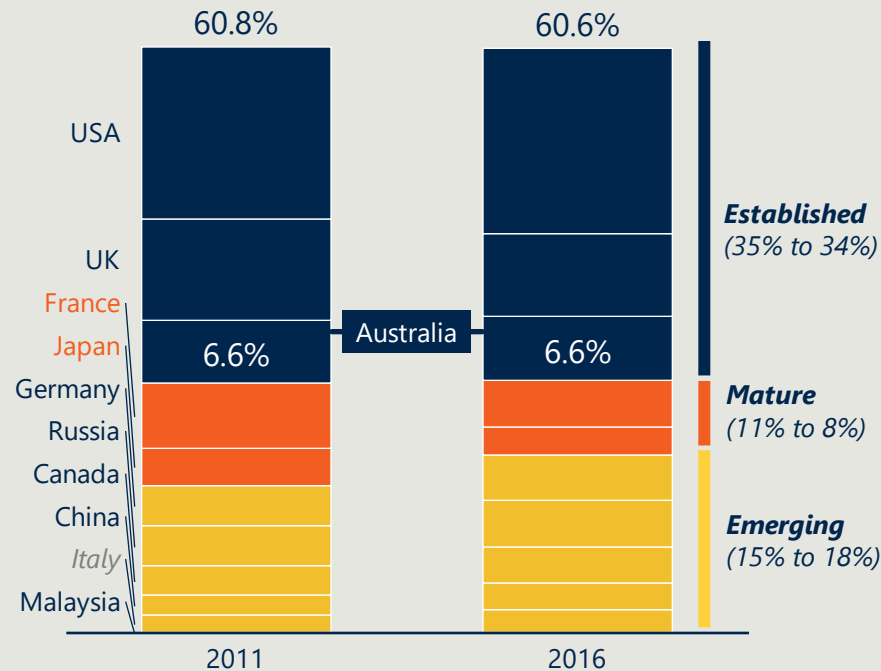
- Global top ten source countries
- 'Close' source countries
- Other



# Australia will increasingly be competing with both established and select emerging destination countries for share of students studying overseas

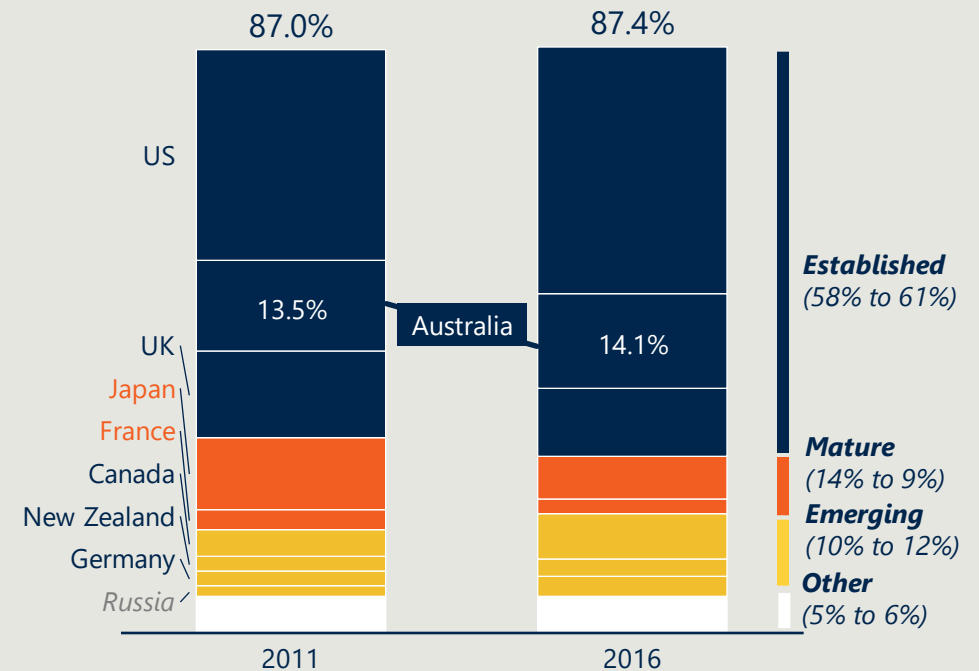
In the global market, **emerging** destination countries within the top ten have increased its share of all international students

Global top ten destination countries' share of international students (2011–2016)



Focusing on Australia's top three source countries (China, India and Malaysia), **emerging** and **established** destination countries have increased similarly

China, India and Malaysia's top ten destination countries' share of international students (2011–2016)



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## QUESTION 4

Between 2011 and 2016, in which market did Australia have the biggest decline in share of global students?



# But, largely the big declines that Australia has experienced in recent years has been due to established rather than new emerging competitors

Net change in share of students from other destination country, Australia and other destination country groups, 2011 to 2016

	Australia	'Next Wave' emerging	'Latent' emerging	'Promising' emerging	Established (US and UK)	Mature
6 Indonesia ▼	-3.2%	+0.8%	-0.2%	-0.7%	+5.4%	+0.8%
8 Hong Kong ▼	-10.1%	+0.6%	0.0%	+0.2%	+7.9%	+0.0%
9 Singapore ▼	-10.9%	+0.6%	0.0%	+0.1%	+7.3%	-0.1%
14 Bangladesh ▲	-6.0%	-2.6%	-0.5%	+50.6%	-15.1%	-5.9%
15 Saudi Arabia ▲	-6.9%	-0.6%	0.0%	-1.1%	+0.7%	+0.1%

Legend (1): Negative relative growth ▼ ▲ Positive relative growth

Legend (2): Negative [Color Scale] Positive

Legend (3): Negative / Positive

Understanding global product preferences  
for **key source countries** and the impact on  
global mobility

# The second case study focuses on global product preferences of key source countries

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## What we already know

Product is a key driver in the decision making of students on where and what to study.

There is a relatively strong understanding of trends in product preferences in the Australian context, but there is not a strong understanding of how these trends align with broader global product preferences

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## What is the focus of the research

Identifying key global students segments and classifying based on key drivers of choice.

Understanding product preferences for key source countries

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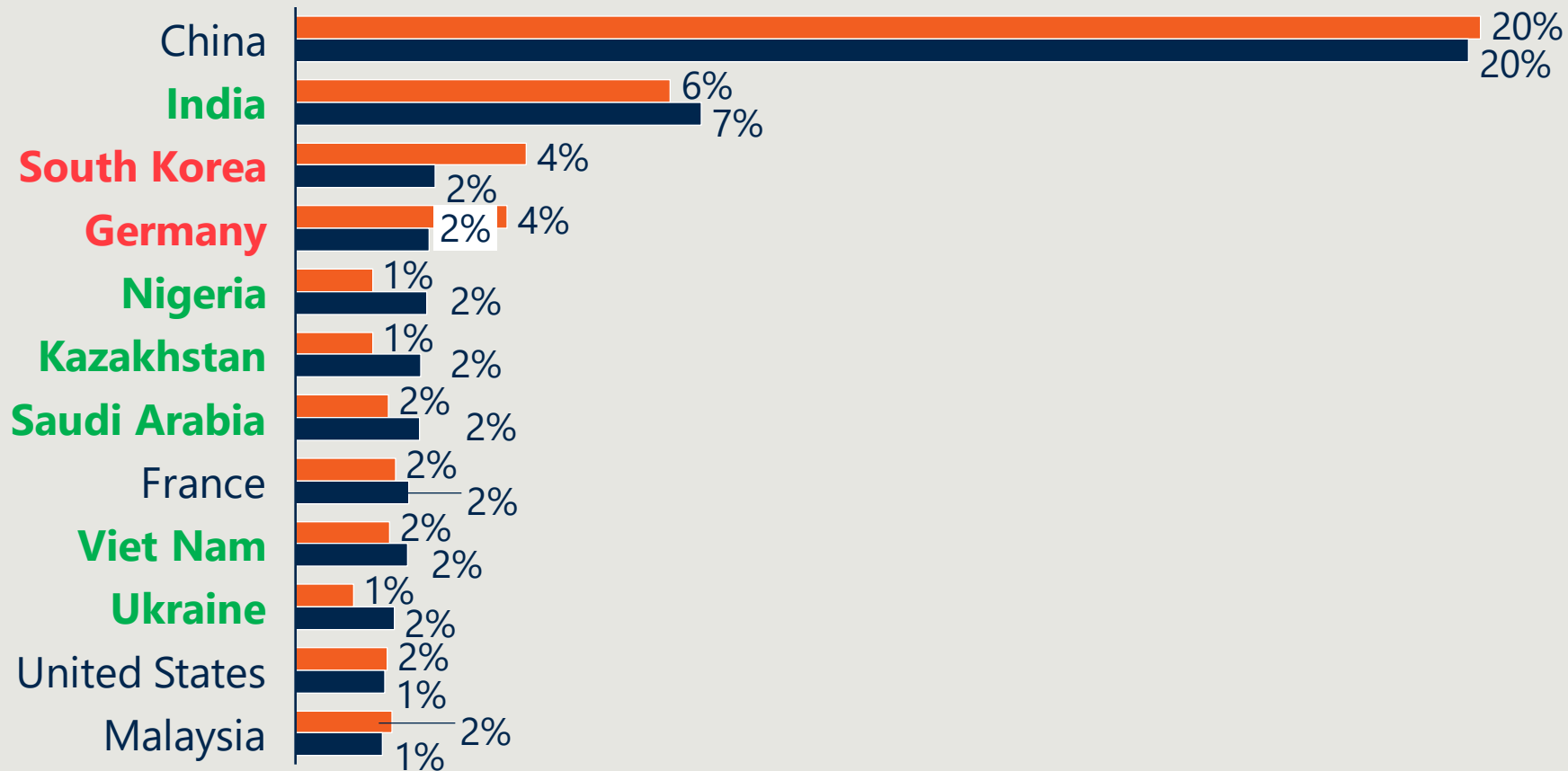
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## QUESTION 5

China, India, South Korea and Germany are the largest source countries or 'sending' countries. What are the fifth and sixth?

# China is the key source country globally, but India and Nigeria have both grown as a share of all students

Total number of students from source country studying overseas, 2003 to 2016



Globally, India and China are the largest source countries, but new markets have emerged in recent years with strong outbound growth

2011  
2016

Increase in % global students  
Decrease in % global students

Source: Nous global student flow integrated dataset Layer 1, based on modelled UNESCO student mobility data.

# Initial analysis identified key global student segments and how it has changed over time

2014

China studying Business  
China studying Engineering  
China studying 'other'  
India studying Engineering  
China studying Mathematics and Computer science  
China studying Social Sciences  
India studying Mathematics and computer sciences  
China studying Sciences  
China studying Humanities  
China studying Arts  
India studying Business  
South Korea studying Business  
Vietnam studying Business  
South Korea studying 'other'  
India studying Sciences

2017

China studying Business  
China studying Engineering  
India studying Engineering  
India studying Mathematics and Computer science  
China studying Mathematics and Computer science  
China studying Sciences  
China studying Social Sciences  
China studying 'other'  
India studying Business  
China studying Arts  
China studying Humanities  
Vietnam studying Business  
Kazakhstan studying Engineering  
Kazakhstan studying Business  
India studying Health professions

Countries in Asia  
serve as a source  
of outbound  
students

China and India  
are dominant  
markets across all  
fields of study

Top key global  
student segments  
are largely  
Business or  
Engineering

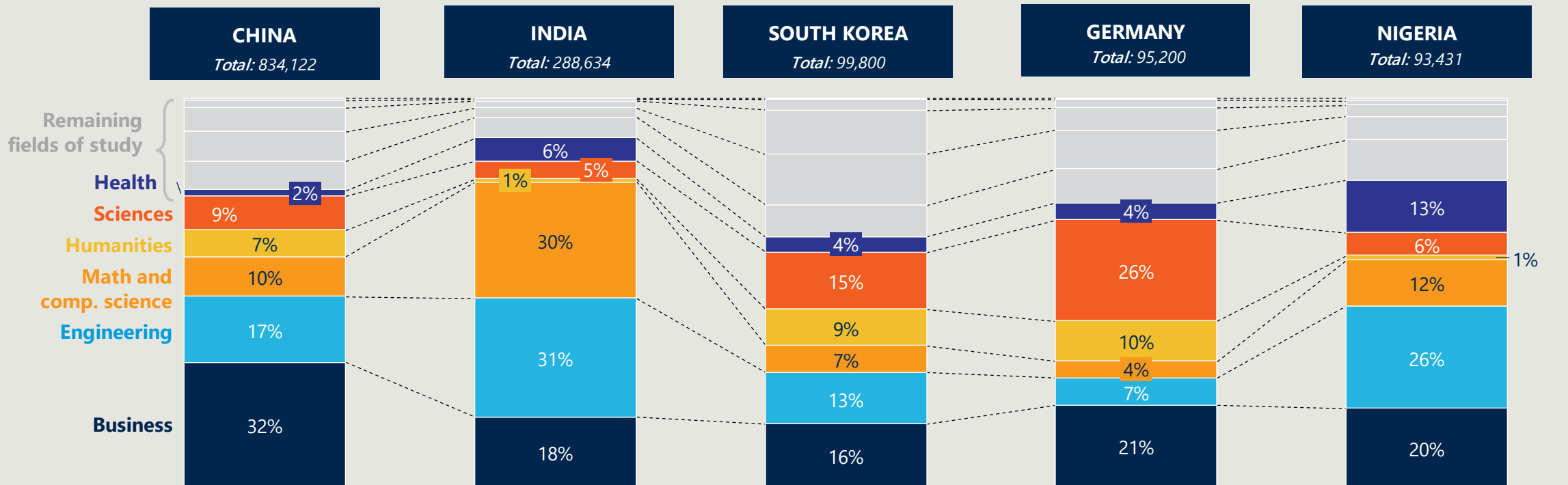
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## QUESTION 6

What proportion of Chinese students studying overseas study 'Business' courses?

# Product preferences differ across the top five global source countries



Business is the dominant preference for international students from **China**,

**Indian** outbound students are distributed evenly across three fields of study

The **South Korean** market is fairly evenly distributed – but Business is the largest.

Sciences and Business are popular preferences for **German** outbound students.

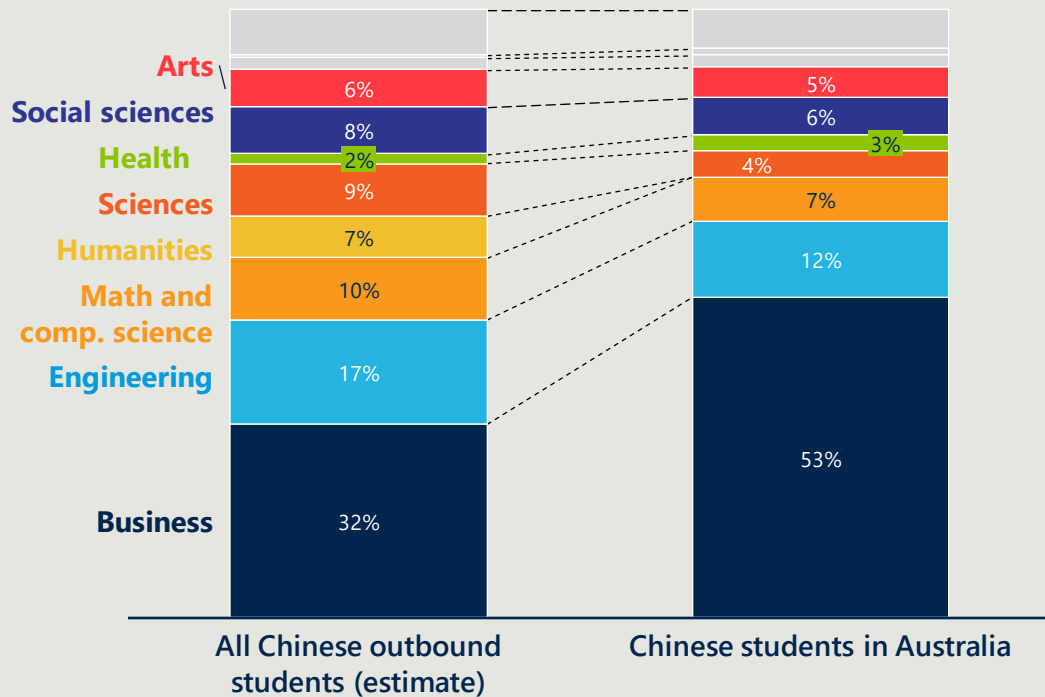
**Nigeria** has a relatively high proportion of Engineering and Business and Health students.



# The preference of Chinese students studying in Australia does not reflect global trends for Chinese students studying overseas

Over a half of Chinese students in Australia study Business, whereas this is balanced for other destinations

Chinese students by field of study, China global estimate and Australian inbound students, 2017



## Global product preferences

**Business** is the dominant preference for international students from China (32%), but other fields are significant – **Engineering** (17%) and Maths and **Computer Science** (10%).

## Global trends

**Business is declining** as a share of the global total Chinese students (37% to 32% from 2014 to 2017), with increases in other fields.

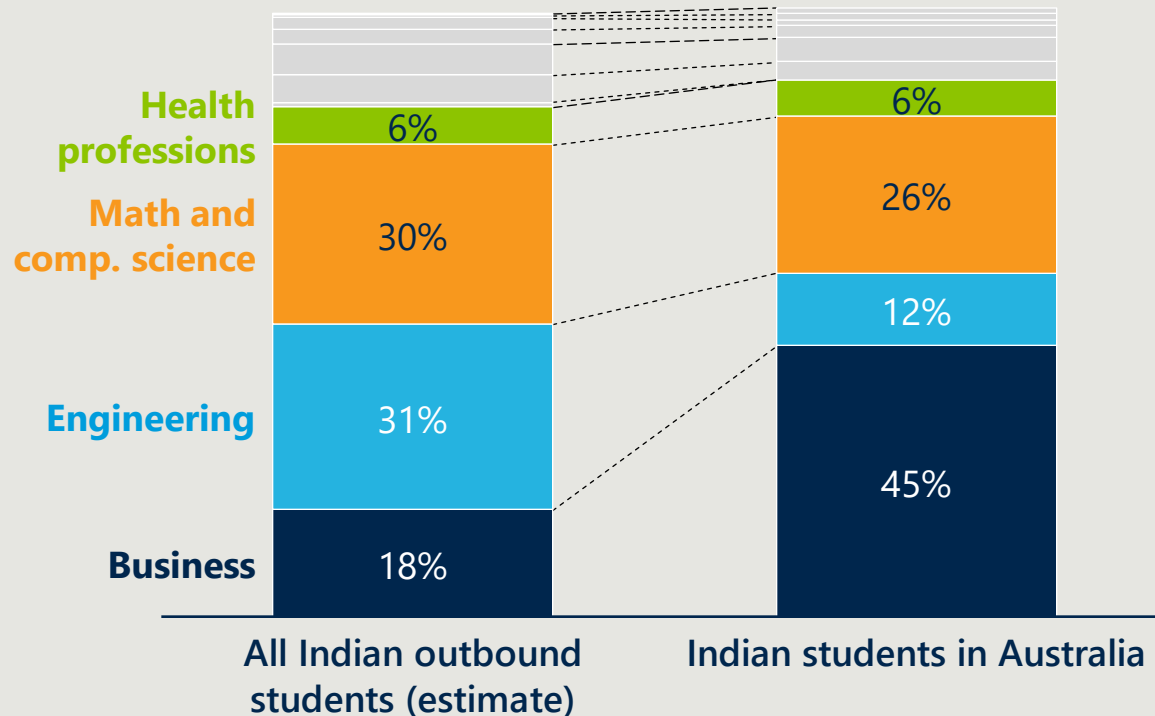
## Alignment to Australia's trends

In contrast – over 50% of Chinese student study in Australia (2017). **This may represent strength of Australian Business program or comparative weakness in other fields (particularly in STEM).**

# Indian product preference for study in Australia, differ from Indian preferences elsewhere

IT product preferences in Australia reflect global student preferences, but Business concentration is distinct for Australia

Indian students by field of study, India global estimate and Australian inbound students, 2017



## Global product preferences

Indian outbound students are **distributed evenly across a wide number of fields** of study – with around 30% in **Engineering** and **Maths/Computer Science** and 18% in **Business**.

## Global trends

**Two largest fields have grown as a share** – **Engineering** and **Maths/IT** – while **Business** flattened (18.5% to 17.5%).

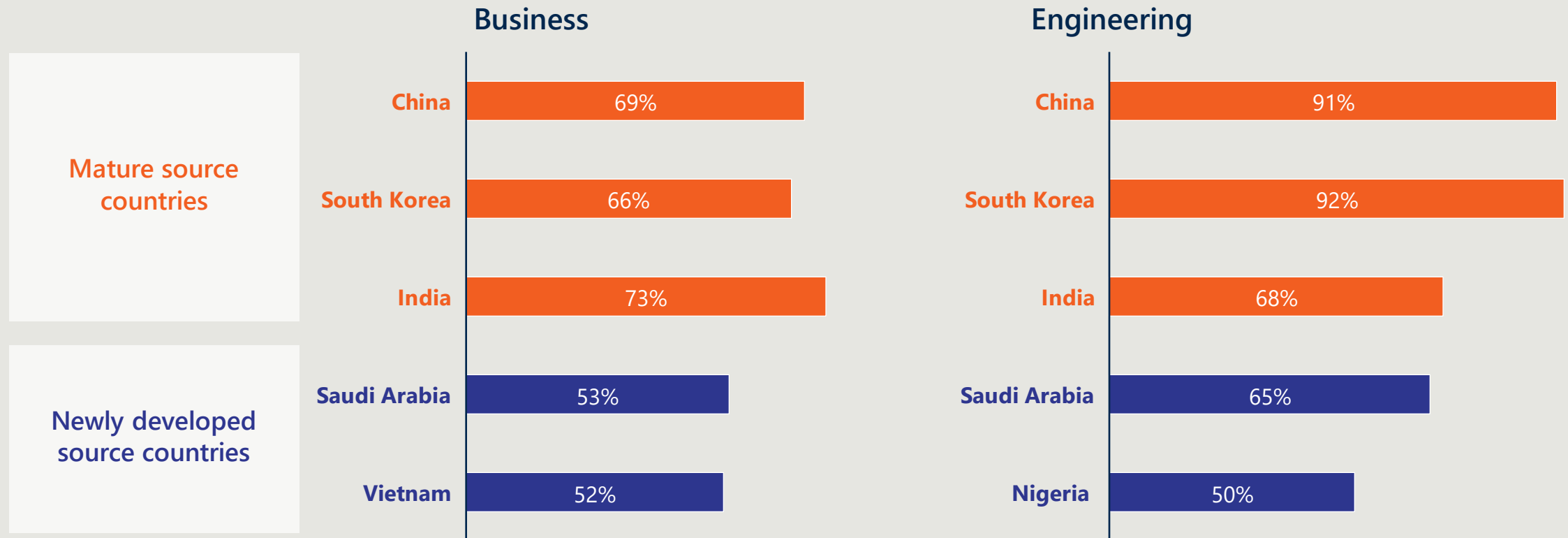
## Alignment to Australia's trends

Indian students in Australia study in a more concentrated set of fields – 45% in **Business**. While Computer Science is in line with global splits, **Engineering is comparably under enrolled** – only 12% of all students.

# There are differences in the quality or reputation of the higher education institutions students from these countries study at

A larger proportion of outbound students from mature source countries attend higher quality institutions compared to outbound students from newly developed source countries

Proportion of students in the UK and Australia studying at a Top 500 Institution, 2017



# Ten key groups emerge through the clustering based on where the segment cohort have similar characteristics

Three key decision dimension:

Cluster group	A. STUDY LEVEL <i>Orientation to PG-level further study</i>	B. INSTITUTION <i>Strong emphasis on high quality institutions</i>	C. DESTINATION <i>Attracted to major country or city destinations</i>	Selection of student segments
1. Pursuers	●	○	●	<b>China – Business, India – most fields</b>
2. Academics	●	●	○	<b>China – Education</b>
3. Learners	●	●	●	<b>China – most other fields</b>
4. High-performers	○	●	○	<b>South Korea – Sciences and Social Sciences</b>
5. Researchers	●	○	○	<b>South Korea – Business</b>
6. Global-adventurers	○	○	●	<b>Vietnam – Business</b>
7. City-explorers	○	○	●	<b>South Korea - Arts</b>
8. Neighbours	○	○	○	<b>Nigeria – Engineering, Kazakhstan</b>
9. Reputation-seekers	●	●	○	<b>China – Humanities</b>
10. Destination-seekers	●	○	○	<b>Turkmenistan/Belarus – Business</b>

Key ● Very important ○ Somewhat important ○ Not important

Understanding the impact of **country specific policy responses** on student mobility

# The third case study focuses on impacts of policy changes on inbound student mobility

## What we already know

Policy responses by government can have a significant impact on the preferences of students, parents and agents in overseas study destination.

Performance in source countries differs significantly for destinations – indicating factors beyond market demand are at play.

## What is the focus of the research

Seeking to understand the causation between introduction or changes to policy and student numbers studying in a destination country

Identification of lessons for the sector based on experiences of other countries in implementing and revising policy changes

Analysis undertaken for the South Korea, Vietnamese, Nigerian and Indian markets

# There are a range of policy settings that can influence student's preference for a destination – which can flow through to overall student mobility patterns

## Student considerations



*How onerous is the application process?*

*What does my student visa entitle me to do?*

*How difficult is it for me to extend my visa or undertake further study/work?*

*What are my options for permanent migration?*



## Student journey

### APPLICATION PROCESS

#### Key policies may include:

- English language and academic requirements.
- Demonstration of financial capacity for study purposes.
- Vetting students as 'genuine'.
- Processing times.

#### Changes to incentivise student may include:

Fast-tracking applications through reduction in requirements on applicant/agent; increasing acceptance rates.

#### Changes to disincentivise student may include:

Increasing the burden or length of the application process through increase demonstration of financial capacity or additional vetting processes.

### VISA ENTITLEMENTS

#### Key policies may include:

- Work rights (time and type).
- Spouse and family.
- Travel restrictions while studying (inside and outside country).

#### Changes to incentivise student may include:

Policies that increase the number of hours a student can work during their studies.

#### Changes to disincentivise student may include:

Policies that place additional restrictions on students while they are studying – in terms of mobility or employment.

### EXTENSION AND PATHWAYS

#### Key policies may include:

- Post-study work settings (type and length).
- Process for applying for further study.
- Employer sponsorship policies.
- Length of time able to stay post study.

#### Changes to incentivise student may include:

Policies that increase length of time following graduation student can stay in country or ability of student to become employed in country.

#### Changes to disincentivise student may include:

Not allowing student to work after study or burdensome processes for further study in the country.

### MIGRATION OUTCOMES

#### Key policies may include:

- Pathways to permanent residency.
- Pathways to citizenship.

#### Changes to incentivise student may include:

Policies that align student visa settings and pathway to permanent residency.

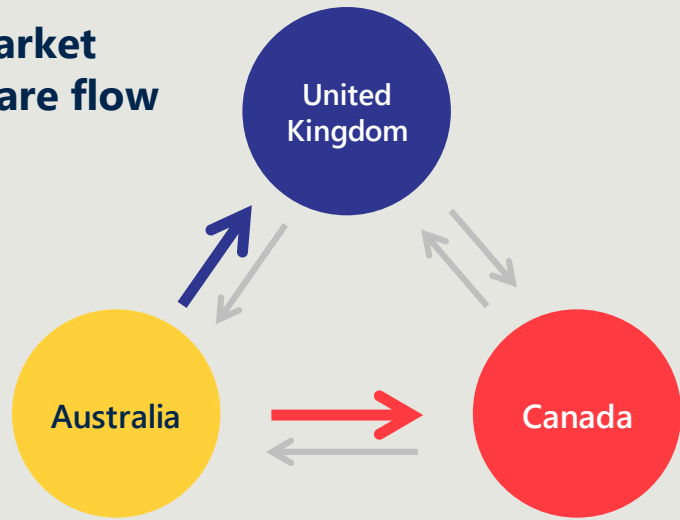
#### Changes to disincentivise student may include:

Policies that restrict access to permanent residency or provide no opportunity for long-term stay.

If we consider India as an example...

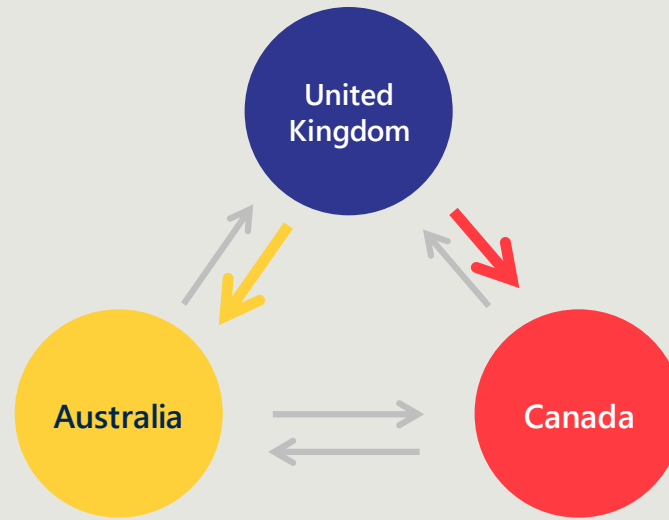
...policy instability over the past ten years has driven three distinct phases

Market  
share flow



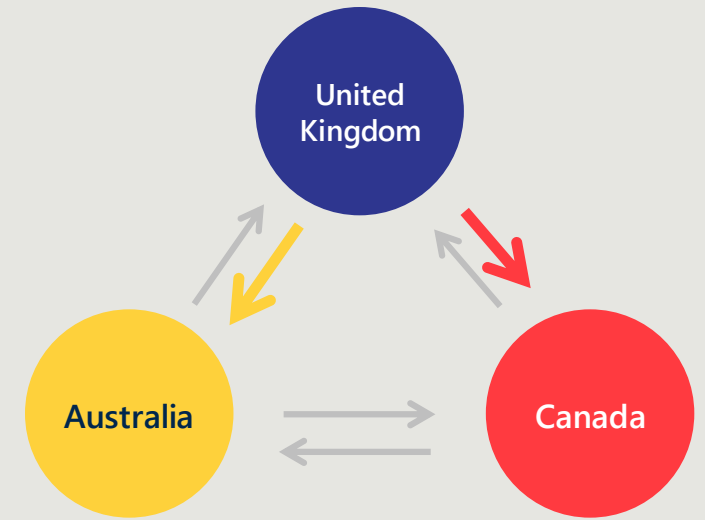
2009 to 2012

Phase A: Australian downturn in 2009, results in net losses to UK and Canada



2012 to 2016

Phase B: UK changes to visas result in decline; Australia and Canada benefit



2016 to present

Phase C: Favourable Canadian settings results in further gain in share

**Winners and losers...** **Canada** was the net winner over this period – increasing share from 2% to over 7%, or an extra 18,000 students from 2004 to 2016. **UK** was most impacted over the period (down to 6%). **Australian** student numbers increased (+30,000), but its share did not.



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## QUESTION 7

In 2010, 15% of all tertiary outbound Indian students studied in Australia, what proportion did so in 2012?

# Australian policy changes had a large impact on the number of Indian students studying in Australia and resulted in increased numbers to UK and Canada

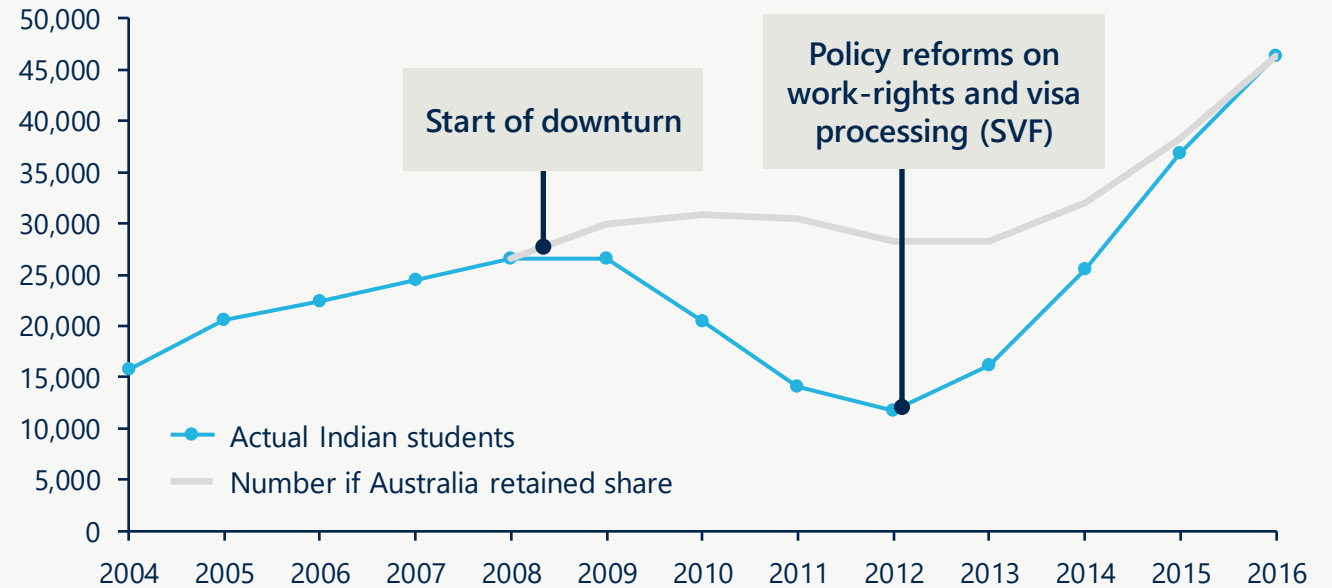
Australia reduced skilled stream to Migration Program in 2009 and introduced reforms to skilled migration in February 2019

This as well as other factors outlined in the 2011 'Knight Review' impacted Australia's relative attractiveness

There was a clear flow on effect to the UK and Canada (who has made changes to post-study work visa and visa processing respectively).

## Overview of change in student mobility

Number of Indian tertiary students studying in Australia and impact of policy changes, 2004 to 2016



Australia market share (%)

16%

15%

10%

6%

12%

15%

# Implementation of restrictive UK policy settings and turnaround on Australia's visa policy leads to reversal of student flow to the UK in 2009

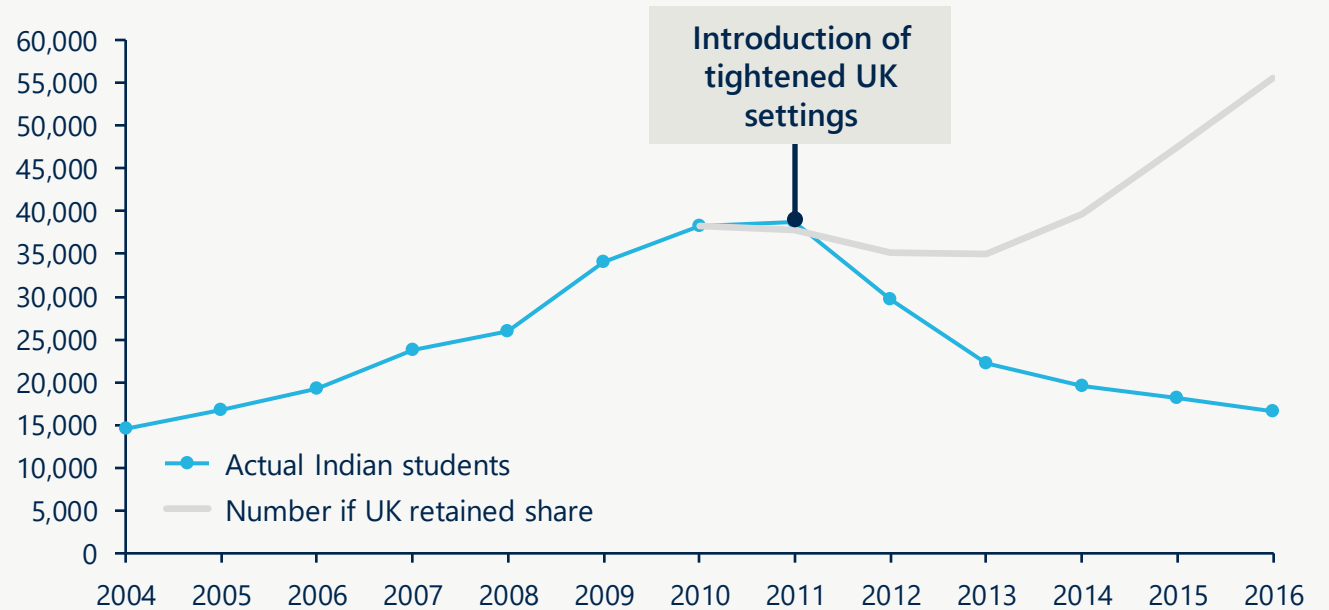
The UK implemented changes in its immigration settings following the 2010 General Election, including tighter visa settings and closing the post study work rights introduced in 2009

In 2012, Australia reverses many of its policies as it implements recommendations from the 'Knight Review' resulting in a flow back to Australia

Canada again increases their inbound student numbers as a direct result of the changes.

## Overview of change in student mobility

Number of Indian tertiary students studying in United Kingdom and impact of policy changes, 2004 to 2016



UK market share (%)

13%

14%

19%

16%

9%

6%

# Favourable Canadian policy settings since 2016 has resulted in further increase in market share of Indian students

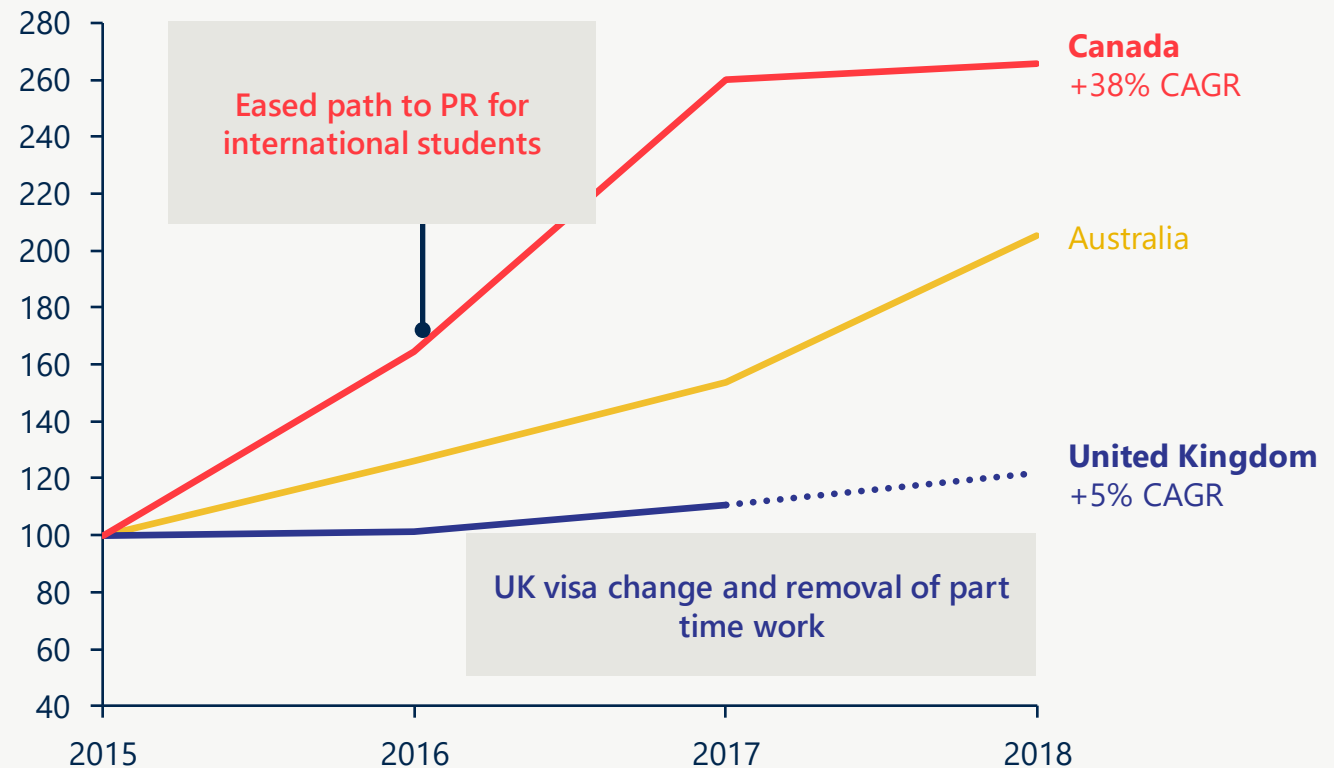
Canada introduces a path to permanent residency for international students in 2016 and introduces streamlined visa processing for key countries in 2018 (*impact yet to be seen*)

In contrast, the UK has removed part time work rights for international students, tougher visa rules and requirements for increased demonstration of financial capacity (2018).

Only in the past month has it re-introduced post-study work rights, the impacts of which won't be seen for another year or two.

## Overview of change in student mobility

Number of Indian higher education students studying in United Kingdom, Canada, Australia and the United States, 2015 to 2018 (index = 2015)



## Four lessons on international student policy settings

- 1 Different policy types appear to have different levels of impact.** Based on the case study topics the biggest changes in student flows were tied to changes in policy settings which restricted or enhanced to work after study.
- 2 Changes in policy settings, especially in visa, work rights and academic requirements, can have a large impact.** These support positive flows, where favourable changes can result in increasing student numbers, and negative flows, resulting in a declining number of students.
- 3 Subsequent policy changes, if quick, can lessen the damage but are unlikely to reverse the change.** The UK and Australia's differing policy response shows that reverting policy settings can minimise the damage. Australia reverted policy settings and bounced back, while the UK *doubled down* and declined.
- 4 Different markets react in different ways to changes in policy settings.** As an example, India was very volatile across the period. This is likely due to drivers in this market being tied to price, migration outcomes and the influence of agents on the market.

Access the survey by going to **sli.do**

Enter the ID - **#AIEC**

## QUESTION 8

Do you have any reflections on the three case studies presented?

Access the survey by going to **sli.do**

Enter the ID - **#AIEC**

## QUESTION 8

What are the issues or topics you would like to see this data set used for next?

# Demonstration of global student flow tool

## Understanding global student mobility flows

### Destination country

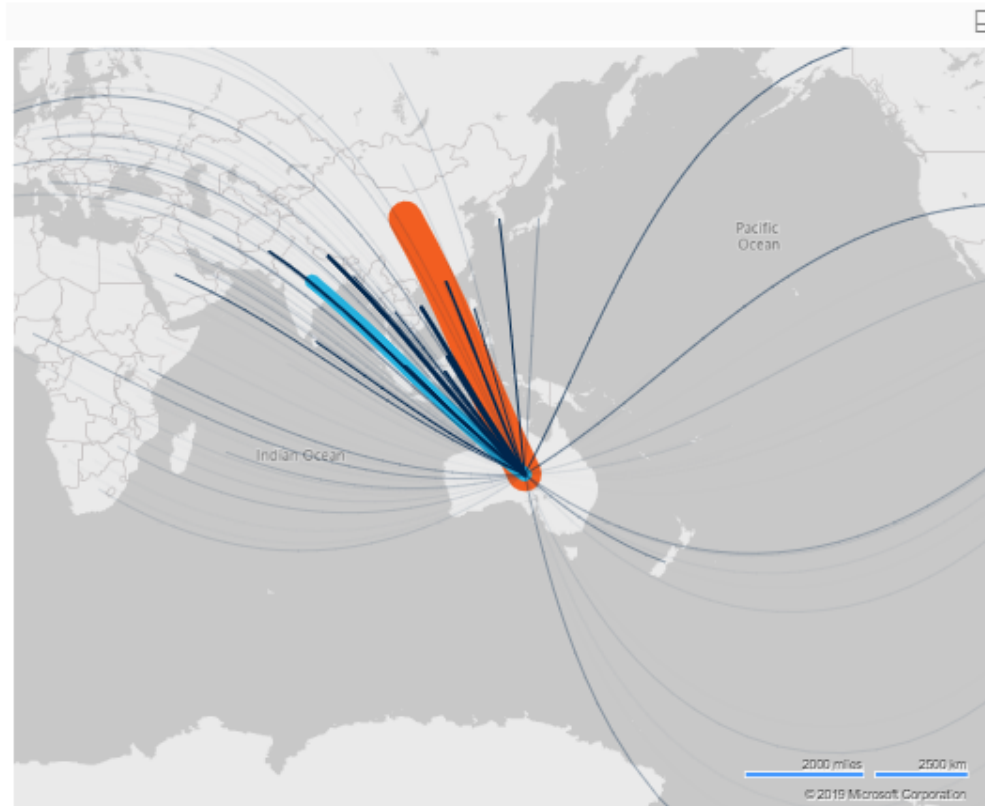
- Select all
- Argentina
- Australia
- Austria
- Belgium
- Canada
- China
- Egypt

### Source country

- Select all
- Afghanistan
- Azerbaijan
- Bangladesh
- Brazil
- Canada
- China
- Colombia

Filter by source country or destination countries using the above controls.

The top 50 source countries and top 30 destination countries are shown.



Source: Nous modelled UNESCO data. Annual student flows of more than 1,000 shown.

### International students in 2016

3M

### Tertiary mobility over time



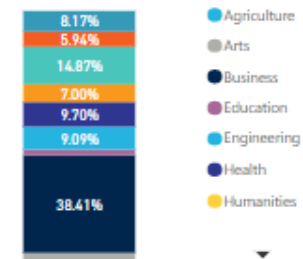
### Source country

Afghanistan

### Destination country

Australia

### Field of education



If information is available on the field of study it will appear above. Source: Project Atlas