

Market Intelligence Brief

GERMANY



2019/2020



INTERNATIONAL
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1. GERMANY AT A GLANCE

Market background

- Germany's economic growth rate fell to 0.6 per cent in 2019, a six-year low, and the COVID-19 pandemic is expected to further dampen growth in 2020, resulting in a contraction of growth for the first time since 2009. The full economic impact of the pandemic is still unknown, but the German economy could contract by up to 7 per cent in 2020.¹ The IMF projects that growth will be 5.2 per cent in 2021, but this is, of course, dependent on the extent of the crisis.
- A shortage of skilled workers is becoming more evident in some segments of Germany's labour market, especially in the sciences, engineering, and healthcare (including eldercare). The working age population is expected to fall by 3.9 million to 45.9 million by 2030.² Germany is also expected to lack 2.5 million skilled workers by 2030.³
- Despite slowing growth, Germany is still ranked 7th in the World Economic Forum's Global Competitiveness Index, below the United States, the Netherlands, and Switzerland. It ranked 24th out of 190 nations in the World Bank's 2020 Ease of Doing Business ranking (8th among European Union member countries).

Local education trends

- In 2015, just over 10 per cent of Germany's population was aged between 15 and 24. This is expected to remain between 9 and 10 per cent in the next two decades.⁴ Likewise, the percentage of the population under 24 will remain stagnant between 23 and 24 per cent. The 2019/20 winter semester saw a record 2.9 million students enrolled at higher education institutions, an increase of more than 29,000 students from the 2018/19 winter semester.
- Due to Germany's unique 'dual' education system and emphasis on vocational training opportunities, 55 per cent of those aged 25-35 have a vocational upper secondary or post-secondary non-tertiary qualification as their highest attainment.
- Germany has the highest share of recent tertiary graduates in science, technology, engineering and mathematics (STEM) fields among all OECD and partner countries (37 per cent). Women are under-represented in most of the STEM fields, making up just 28 per cent of new entrants.

International education

- The number of German tertiary students studying abroad has risen by over 100 per cent over the last two decades, with 144,900 students leaving for foreign study in 2019. Numbers have stabilised over the last five years and growth in outbound student numbers is likely to slow in line with slowing population growth.⁵
- Germany's commitment to the internationalisation of education, science and research provides a supportive environment to help drive outbound student flows. Germany has a very high English proficiency and is 10th on the English First English Proficiency Index. More than 90 per cent of students learn English in secondary school.

¹ [Deutsche Bank expects German economy to contract 4%-5% in 2020](#), Reuters, 19 March 2020; ['Great Lockdown' to rival Great Depression with 3% hit to global economy, says IMF](#), The Guardian, 14 April 2020.

² [Skilled professionals for Germany](#), Federal Ministry for Economic Affairs and Energy.

³ [Strategie gegen Fachkräftemangel verschlafen](#), CIO, 14 January, 2019.

⁴ [World Population Prospects 2019](#), United Nations, 2019.

⁵ [Global Student Flow](#), UNESCO Institute for Statistics (UIS), 2018.

4 EDUCATION INSIGHTS: GERMANY

- Employability is a key motivator for study abroad. German students perceive international experience, including foreign language skills (especially English), as advantageous for improving employability outcomes. Students are also interested in the cultural opportunities that come with the experience of living abroad. German students have also cited large class sizes at German higher education institutions as a reason to study abroad.

2. INTRODUCTION

Since the reunification of East and West Germany in 1990, Germany has come to be regarded as one of the leading countries in Europe and in the European Union. Home to 83 million people, it is the EU's largest economy and highest net contributor to its budget. It is a well-respected country for business, research and education, and holds a powerful role on the global stage. The German economy experienced lacklustre growth in 2019 (an increase of just 0.6 per cent), but before the COVID-19 crisis the country had a budget surplus, low unemployment, and high consumption.

The COVID-19 pandemic is likely to cause one of the biggest global recessions seen in nearly a century, and Germany's economy is going to have to manage the predicted contractions in growth, though the full extent of the pandemic's impact is unknown at the time of writing. The government also faces sustained challenges from slow labour productivity and a shortage of skilled workers, most notably in the science and engineering sectors. Contributing to the skilled worker shortage is Germany's ageing population, which is sixth in the world in terms of proportion of population over the age of 60. By 2030, the population is forecast to decline by 3.7 per cent to 79.2 million, with no expectation that the influx of migrants will offset the decline. Germany's social and welfare programmes are thus set to feel increasing strains over the coming decades.

Though national expenditure on education sits 0.5 per cent below the European Union average of 4.6 per cent, Germany is recognised regionally as a leader in research, innovation and vocational learning. It is also a recognised leader in STEM education. In 2017, 37 per cent of German students graduated with a degree in STEM subject areas – the highest proportion amongst the Organisation for Economic Co-operation and Development's (OECD) 36 member countries.

By several key measures, Germany ranks as the UK's most important higher education partner in Europe. Within the European Union, it is the leading source of international students to the UK, with 18,590 enrolled in UK universities during the 2017/18 academic year. It is also by far the UK's most important research partner on the continent, accounting for 10 per cent of research collaboration in 2019.⁶ Since 2000, the number of German students going abroad has more than doubled, and currently around one-third of students undertake some or all of their degree abroad. Germany's commitment to internationalising education, science and research, and its boosting of mobility targets has provided a supportive environment that drives student mobility.

While the link between Germany and the UK will undoubtedly remain important in the future, recent political developments are set to significantly reshape the relationship in education. Brexit looms largest among these. Higher UK tuition fees for EU students will likely deter some German students and more limited access to EU research funds could hamper future exchanges between the two sides. However, both sides recognise the importance of academic collaboration and exchanges.

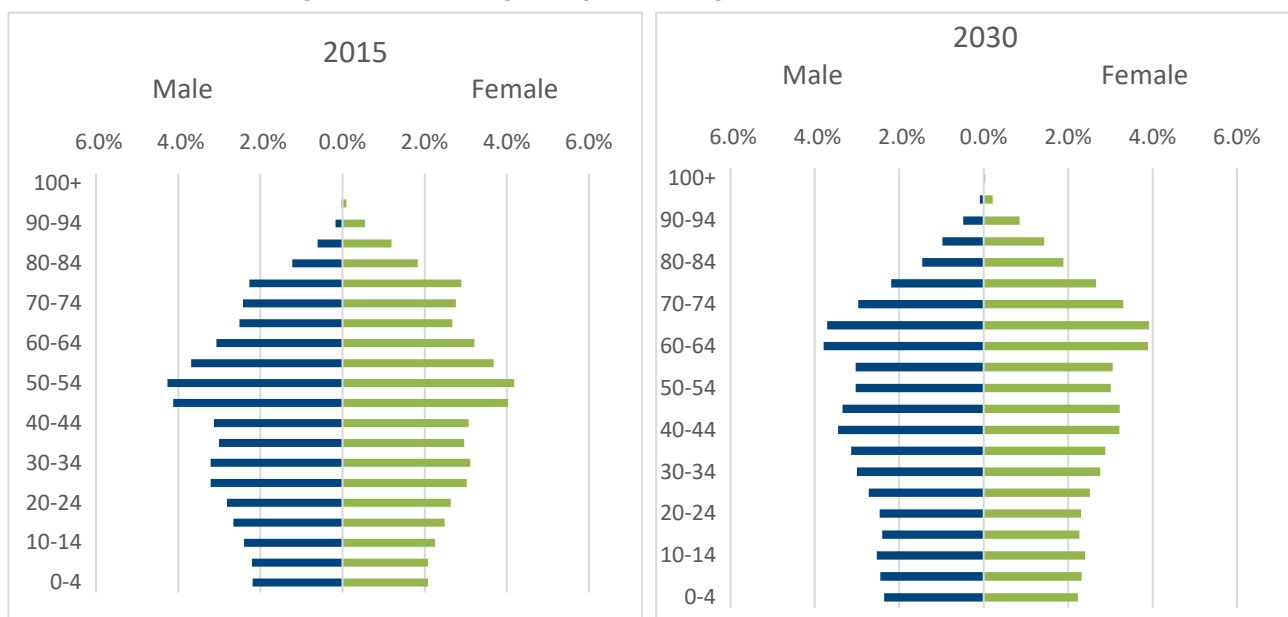
In the coming years, Germany must confront specific challenges to address declining productivity, a skills shortage and an ageing population. The country's sustained commitment to both outward and inward student mobility has served as an undeniable force in ensuring its population remains educated, competitive and as leaders in innovation. In relation to the education sector, Germany will remain both a competitor of and sender to the UK market. Despite unpredictable political and economic challenges, both nationally and regionally, the next few years will prove crucial to strengthening the UK-German educational partnership.

⁶ [United Kingdom Country Profile](#), Nature Index, 2019.

3. DEMOGRAPHICS

Germany is Europe's most populous nation with 83 million inhabitants. However, the population is ageing and is set to shrink to under 75 million by 2060 depending on migration levels.⁷ Germany's Federal Statistical Office (Destatis) predicts that significant shifts in the population demographics will occur by 2035, such as a decline in the working age population by between four and six million people. Immigration could somewhat offset the country's population decline, but the working age population segment could continue to shrink to 46 million by 2060.⁸ Deaths continue to outnumber births, and while the fertility rate is on the rise, it stood just below 1.6 in 2018, below the population replacement rate of 2.1.⁹ The median age of the population in Germany is the third highest globally, behind Monaco and Japan. In 2018, about 18 per cent of the population was aged under 20, and about 62 per cent was aged 20-66.

Figure 1: Germany's Population Pyramid, 2015 and 2030



Source: UN Population Division

The declining fertility rate means that Germany's student-age population is set to continue to decline in coming years. The number of people under the age of 20 could decline by 13 per cent in the next 40 years, from an expected 15.3 million in 2020 to 13.3 million in 2060.¹⁰ A report from the Expert Council of German Foundations on Integration and Migration (SVR) found that one in six German university campuses is shrinking. This has led many universities to more actively recruit overseas students to prevent facing higher costs per student.¹¹

⁷ [Germany's Population by 2060 - Results of the 14th Coordinated Population Projection](#) (only available in German), Federal Statistical Office of Germany (Destatis), 2019.

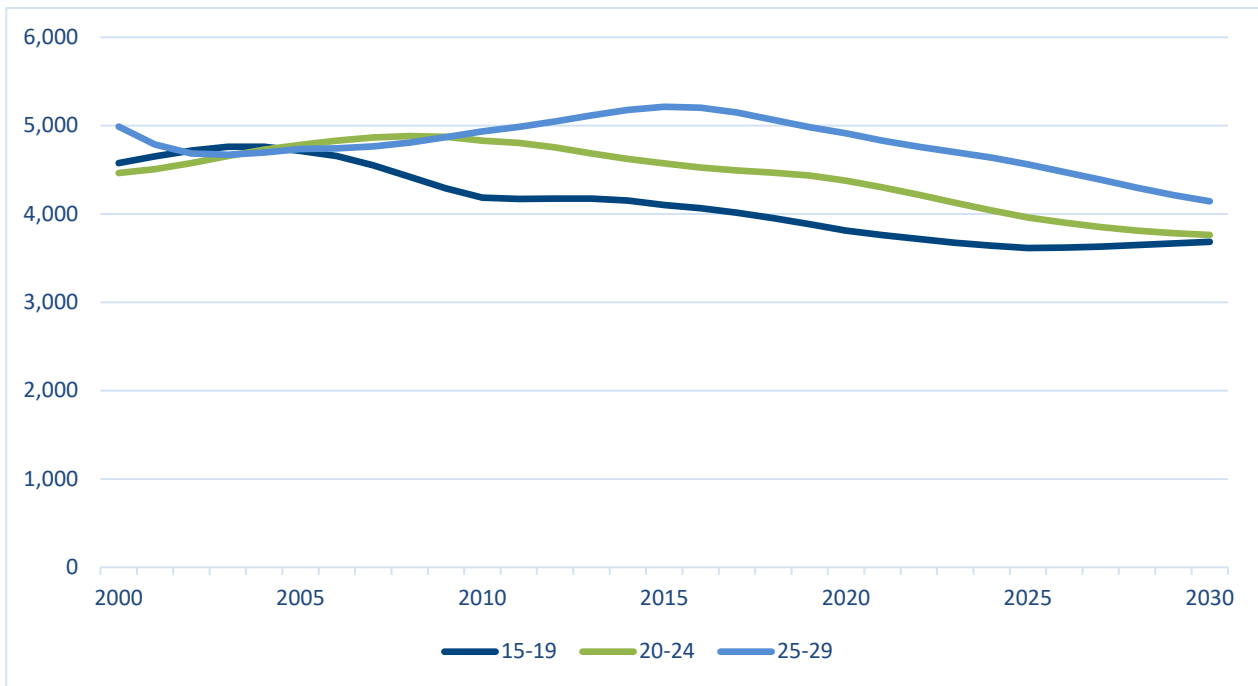
⁸ [Working-age population expected to decrease by 4 to 6 million by 2035](#), Destatis, 27 June 2019.

⁹ [Country Profile: Germany](#), Euromonitor, 8 November 2019.

¹⁰ [Population by age group until 2060](#), Destatis, 2017.

¹¹ [Demografischen Wandel entgegen](#), Expert Council of German Foundations on Integration and Migration, 2019.

Figure 2: Student Age Population



Source: UN Population Division

Germany's ageing population will place greater strains on the working-age population and the health and welfare systems. In 2018, 18 per cent of the population was over the age of 65, and the government forecasts that by 2060, more than one in four people will be over the age of 67.¹² According to official projections, the working age population (age 20-67) could decline to about 48 million by 2030, down from 51.8 million in 2018.¹³

Immigration may work to offset some of the immediate effects of population ageing, especially if young workers bring their families to Germany, boosting the young population segment. However, the government warns that even high immigration will not reverse the process.¹⁴ The German government plans to attract more skilled workers from abroad and is testing discussing a points-based immigration system.

Recent waves of immigration have reshaped German society. By the end of 2018, 10.9 million people living in Germany had foreign citizenship while more than one in five (23 per cent) had a migrant background.¹⁵ Effectively integrating the large proportion of immigrants into the labour force and the education system are among the key considerations for the government.

According to national statistics, the largest shares of the foreign-born population come from Turkey (13.5 per cent), Poland (7.9 per cent), Syria (6.8 per cent), Romania (6.4 per cent) and Italy (5.9 per cent), while 43.9 per cent originate from other EU states.¹⁶

¹² [14th Coordinated Population Project for Germany](#), *DeStatis*, 2019.

¹³ *Ibid.*

¹⁴ [Currently high immigration cannot reverse population aging](#), *Destatis*, 2016.

¹⁵ Destatis defines a person with a migrant background if he/she or at least one parent did not get German citizenship by birth.

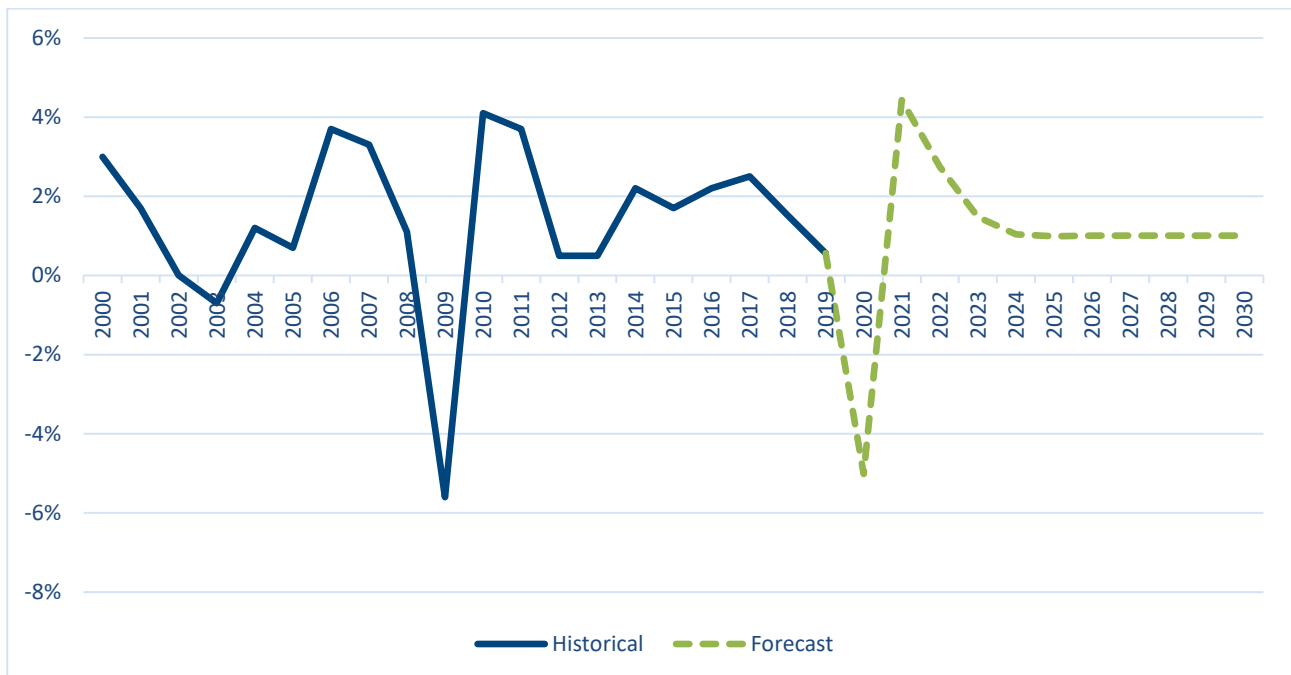
¹⁶ [Foreign population by place of birth and selected citizenships on 31 December 2018](#), *DeStatis*, 2019.

4. ECONOMICS

Thanks to structural reforms made in the early 2000s, Germany made a strong recovery from the global financial and economic crisis and became an economic powerhouse of the European Union. The employment rate hit a record high in 2019 and the country has one of the largest budget surpluses among EU countries. Its construction and service sectors are booming, and domestic demand is solid.

The unified German economy posted a record 10th consecutive year of growth in 2019, though the growth rate of 0.6 per cent was the lowest rate in six years (growth was at 1.5 per cent in 2018 and 2.5 per cent in 2017).¹⁷ Growth in 2019 was supported mainly by consumption expenditure and improvements in the service sector, which has previously underperformed due to restrictive regulations.¹⁸ Before the COVID-19 pandemic hit the German and global economies, growth was expected to increase to 1.3 per cent in 2020. However, the pandemic is likely to cause a major global recession and the IMF and banking authorities have revised down growth projections for the German economy, expecting it to contract by as much as 7 per cent in 2020.¹⁹ Depending on the extent of the global recession and the length of the pandemic crisis, the IMF estimates that Germany's growth could be back up to 5.2 per cent in 2021.

Figure 3: Real GDP Growth



Source: IMF, Euromonitor forecasts

The lacklustre growth in 2019 was attributed to slowdowns in industry and in the export of goods caused by global trade tensions, and the country only narrowly avoided a technical recession in the

¹⁷ [German economy grew 0.6% in 2019](#), DeStatis, 15 January 2020.

¹⁸ [Country Profile: Germany](#), Euromonitor, 8 November 2019.

¹⁹ [Deutsche Bank expects German economy to contract 4%-5% in 2020](#), Reuters, 19 March 2020; ['Great Lockdown' to rival Great Depression with 3% hit to global economy, says IMF](#), The Guardian, 14 April 2020.

third quarter of 2019. Output in industry was down by 3.6 per cent in 2019, and the automotive industry was especially hard-hit.

In 2018, 68.2 per cent of GDP came from services, 31.1 per cent came from industry and 0.7 per cent came from agriculture.²⁰ The contribution of industry to the economy is much higher in Germany than in most developed economies, including major European economies such as France and the UK. This reflects Germany's export dependence and expertise in high-value, high-tech industries, including machinery, cars and vehicle parts, chemicals and pharmaceuticals, and metal products and instruments. The manufacturing sector accounts for 23.5 per cent of GDP and employs nearly 20 per cent of the workforce.²¹

One of the most pressing structural challenges for the German economy is managing a shrinking labour force as the population ages. Adaptation to technological change and digitisation has been slow, and labour productivity growth remains low.²² The manufacturing sector has high labour productivity in part due to a skilled workforce. The shortage of skilled workers is increasingly evident in some segments of the labour market, especially in the sciences, engineering and healthcare.²³

The government has plans to speed up the integration of refugees and migrants into the workforce, introduce an immigration law to make it easier for skilled workers to work in Germany and support the participation of women in executive positions in the private and public sector to combat labour shortages.²⁴ The 0.9 per cent increase in employment in 2019 was mainly due to a rise in employment subject to social insurance, higher labour force participation and the immigration of foreign workers.²⁵

While Germany faces significant structural and external economic challenges, long-term growth is expected to be stable. The government budget has also achieved surpluses for eight consecutive years, though the 2019 surplus was lower than in previous years. The government has developed plans to decrease annual carbon emissions, and some of the annual surplus will be used to fund measures under the Climate Action Programme 2030.²⁶ To bolster the economy amid the COVID-19 pandemic, the German parliament passed a €750 billion aid package and considered taking on new debt for the first time since 2013.²⁷

In 2018, the German government launched the new High-Tech Strategy 2025, which aims to position Germany as a worldwide innovation leader by increasing R&D spending and focusing on digitisation and artificial intelligence. Under this strategy, R&D spending is set to increase from 2.9 per cent of GDP in 2016 to 3.5 per cent by 2025. Tax incentives are being considered to encourage private R&D spending while VAT exemptions are planned to help start-ups. Germany is already an attractive location for pharmaceutical R&D as it is the world's fourth-largest pharmaceuticals market.²⁸ Its thriving biotech industry is supported by close cooperation between biotech companies, research institutes, technology parks, and political leaders.²⁹

Germany ranked 7th in the World Economic Forum's 2019 Global Competitiveness Index, four places lower than 2018 but still third among European countries. It ranked in the top 10 in seven of the 12 pillars used in the index (Infrastructure, Macroeconomic Stability, Skills, Product Market, Market Size,

²⁰ [Germany: Share of economic sectors in GDP \(2018\)](#), Statista, January 2019.

²¹ [Country Profile: Germany](#), Euromonitor, 8 November 2019.

²² [Five Takeaways from Germany's Economy Outlook](#), International Monetary Fund, 10 July 2019.

²³ [Skilled labour shortages in German companies – Which occupations are in demand](#), The Federal Government of Germany, accessed 14 August 2018.

²⁴ [OECD Economic Surveys: Germany](#), OECD, June 2018.

²⁵ [German economy grew 0.6% in 2019](#), DeStatis, 15 January 2020.

²⁶ [German Draft Budgetary Plan 2020](#), German Federal Government, October 2019.

²⁷ [Coronavirus: German parliament passes historic aid package](#), Deutsche Welle, 25 March 2020.

²⁸ [Industry Overview – The Pharmaceutical Industry in Germany](#), Germany Trade and Invest, 2018.

²⁹ [Biotechnology clusters in Germany](#), Germany, Trade and Invest, 2017.

Business Dynamism, and Innovation Capability), ranking first in two of them (Macroeconomic Stability and Innovation Capability), and beat the OECD average on all pillars except ICT adoption.³⁰

Germany was ranked 4th on the 2019 Human Development Index. On the World Bank's Ease of Doing Business Index, Germany came in 24th place globally and 8th among EU countries, behind the UK which came 9th globally and second in the EU.

³⁰ [The Global Competitiveness Report 2019](#), *World Economic Forum*, 2019.

5. POLITICS & POLICYMAKING

In the September 2017 federal election, Chancellor Angela Merkel won a fourth term in power after a tough re-election campaign. Major losses for Germany's two main parties, Chancellor Merkel's Christian Democratic Union (CDU) and the Social Democratic Party (SPD), resulted in the need for the coalition partnership to be renegotiated, a process that took nearly five months to complete. Though the SPD agreed to form another "grand coalition" government with the CDU ended a critical period in German politics, the coalition has been frequently marred by tensions between the two parties and the SPD is losing constituent support.

Both parties suffered big losses of support during the European Union parliamentary elections in May 2019. In October 2018, Merkel announced that she will step down as leader of the CDU and will not seek re-election in 2021.

Rising dissatisfaction with Germany's main parties has resulted in increased support for other parties. In the May 2019 EU elections, the Greens received 20.5 per cent of support in opinion polling, five percentage points ahead of SPD, and more than double the support received in the 2017 federal election. Alternative für Deutschland (AfD) has meanwhile emerged as an increasingly popular far-right political party. AfD capitalised on rising social tensions over immigration during the 2015 European refugee crisis, leading to significant gains in Germany's 2017 national elections. With almost 13 per cent of the national vote, it became the first far-right party to win seats in the federal parliament in more than half a century. Exit polls suggested that 60 per cent of AfD voters cast a "protest vote" in response to Merkel's decision to welcome more than a million migrants, mainly Muslims, fleeing poverty and conflict in the Middle East.³¹ AfD also received 11 per cent of the vote in the 2019 EU election, 2 per cent lower than the party received in the 2017 national elections.

The impact of Merkel's immigration policy has presented unique challenges for Germany and sparked divide over the value of multiculturalism. As certain pockets of the country deal with the ramifications of the country's changing cultural landscape, this is likely to play out in elections for years to come.

Climate change has galvanised young people in Germany to participate in strikes and demonstrations and is a contributing factor to the rise of the Greens. The central government has attempted to reach out to the younger population with a new Youth Strategy to address nine thematic issues affecting people ages 12-27 including climate change, but also others such as mobility and digital issues.³²

To tackle climate change, Germany launched the Climate Action Programme 2030, which aims to cut Germany's greenhouse gas emissions by 55 per cent from the 1990 level by 2030. The programme includes plans to implement prices on CO₂ emissions from the transport and heating sectors in 2021, as well as on emissions from the building sector; launch a national emissions trading scheme in 2021; motivate industry and individuals to be more environmentally-friendly; as well as new targets for reducing emissions in agriculture. All additional income from the Climate Action Programme measures will be reinvested in climate change mitigation measures or passed on to citizens to alleviate their financial burden.³³

Germany ranks 9th out of 127 countries in the Global Innovation Index 2019 and is fourth worldwide in research output, accounting for 5.8 per cent of global output and 21.2 per cent of regional output.³⁴ The Max Planck Society has consistently ranked 3rd globally for research output in the 2019 Nature Index Global Top 100. In 2018, 51.3 per cent of research was the result of international collaboration, in comparison to 56 per cent in the United Kingdom.³⁵

³¹ ["German groups mobilize against rise of far right"](#), Reuters .27 October 2017.

³² ["A joint strategy for the young population,"](#) German Federal Government, 3 December 2019.

³³ [Climate Action Programme 2030](#), German Federal Government, 20 September 2019.

³⁴ [SciMago Country and Journal Rank.](#), Country Rankings, Accessed December 16 2019.

³⁵ Ibid.

6. EDUCATION

Pre-tertiary education

The federal government has a smaller role in education, leaving the Länder, Germany's federal states, primarily responsible for local education systems. Education is compulsory from the age of six to age 18 (11-12 years depending on the federal state), although almost all children enrol in pre-school from the age of three. On average, young Germans can expect to receive 17 years of education, including tertiary study.³⁶ In the 2018 PISA test, German students' scores were above the OECD average in reading literacy, mathematics, and science, but scores in all subjects dropped. This was the first year that reading scores declined, but scores in mathematics and science have been falling since PISA 2006 and PISA 2012, respectively.³⁷ Socioeconomically advantaged children outperformed disadvantaged students in all subjects at rates higher than the OECD average. Germany ranks first out of 141 countries in the WEF Global Competitiveness Report 2019 for mean years of schooling and 10th for critical thinking in teaching.³⁸

Students are sorted into different education streams at the secondary level, usually based on teacher recommendations and parent decision-making. Streaming plays a significant role in determining a student's future career and income potential. As such, it is a contentious issue, and the OECD has recommended limiting student sorting.³⁹ Pupils typically progress to Gymnasien (generally targeting higher education), Realschulen (standard academic subjects plus technical and vocational streams to Grade 10) and Hauptschulen (standard academic subjects plus vocational streams to Grade 9 or 10), although there are regional variations. In response to the OECD recommendation, increasingly the comprehensive schools (known as Gesamtschulen in some Länder) now serve more than one of these sorting streams. Germany has a world-renowned 'dual' vocational education system, and 47.5 per cent of the population has a dual system qualification where general education/vocational students combine study with apprenticeships.⁴⁰

Private schools are often supported financially by the Länder and include a small number of boarding, international, religious and alternative schools (such as Waldorf schools). Such schools usually charge tuition fees. The private school system has grown significantly: there are now more than 5,800 privately-run schools in Germany, accounting for 14 per cent of all schools. Only 5 per cent of primary school students were enrolled in private school in 2017, up from 3 per cent in 2005.⁴¹ The share of secondary school students enrolled in private schools has risen from 7 per cent in 2005/06 to 9.5 per cent in 2017.⁴² Private schools are often considered to have better teaching conditions, smaller class sizes and more weekly lessons, although do not outperform state-funded schools. While state-funded education remains the norm, parents may opt for private schools because of smaller class sizes, all-day provisions (although this is changing, as around two-thirds of all public schools offer compulsory all-day provision), or religious education, international qualifications, bilingual study options or dissatisfaction with public education policy. Single-sex education remains rare and is almost exclusively church-run. There are no more than 60 girls-only schools and three boys' schools across the country.

By lower-secondary level, all students are studying English. However, many students opt to change languages or end foreign language study altogether, particularly for students in the vocational stream.

³⁶ [School Life Expectancy by Level of Education](#), UNESCO Institute for Statistics, 2019.

³⁷ [Results from PISA 2018 – Country Note: Germany](#), OECD, 2019.

³⁸ [The Global Competitiveness Report 2019](#), World Economic Forum, 2019.

³⁹ *Low Performing Students: Why They Fall Behind and How to Help Them Succeed*, OECD, 2016.

⁴⁰ [Educational Attainment of the Population of Germany](#), Federal Statistical Office of Germany, DeStatis, 2018.

⁴¹ [School enrolment, primary, private](#), World Bank, 2019.

⁴² [School enrolment, secondary, private](#), World Bank, 2019.

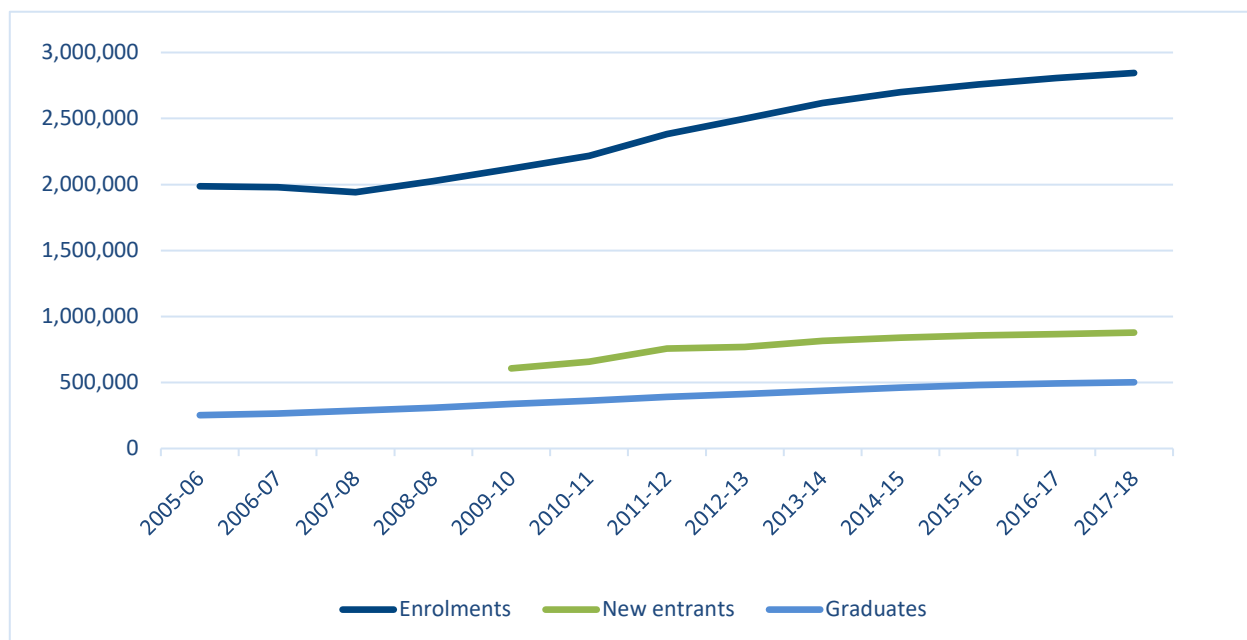
In upper-secondary, 68.3 per cent of students are studying English: 94.5 per cent of general stream students and 37.9 per cent of vocational stream students.⁴³

Higher education

In 2018/19, there were 426 higher education institutions (HEIs) in Germany, including 106 universities, 216 Fachhochschulen (universities of applied sciences) and a smaller number of specialised colleges.⁴⁴ In 2018, about 60 per cent of Germany's HEIs were state-funded. Germany ranks 16th out of 50 countries in the 2019 Universitas 21 ranking, down one place from the previous year.

The 2019/20 winter semester saw a record of 2,897,300 students enrolled at higher education institutions, an increase of more than 29,000 students from the 2018/19 winter semester.⁴⁵ However, the number of first-semester students declined for the second consecutive year. Tertiary attainment rates are rising in Germany — from 24.6 per cent in 2005 to 29.1 per cent in 2018 — but the level is still below the OECD average of 36.9 per cent.⁴⁶ Increasing enrolment in higher education is central to the Higher Education Pact, one of the aims of which is to add over 700,000 university places by 2023.

Figure 4: Germany's HE Enrolments, New Entrants and Graduates



Source: Federal Statistical Office

Among young adults aged 25-34, tertiary attainment increased from 22 per cent in 2005 to 32.3 per cent in 2018 but is still below the OECD average of 44.5 per cent. An upper secondary vocational qualification plays an essential role in Germany's educational system and ensures high employability, which also contributes to relatively lower tertiary attainment rates. Among those aged between 25 and 34, 55 per cent have a vocational upper secondary or post-secondary non-tertiary qualification as their highest attainment. The employment rate for this group is just below the rate for individuals with a tertiary qualification (84 per cent and 88 per cent, respectively). Amid the significant increase in entry into tertiary programmes over the past decade, 56 per cent of young Germans are expected to

⁴³ [Overview of the German School System](#), Deutschland.de, 11 July 2019.

⁴⁴ [Finding a university](#), German Academic Exchange, accessed 8 January, 2019.

⁴⁵ [Record number of students in winter semester 2019/2020](#), DeStatis, 27 November 2019.

⁴⁶ For 25-64 year olds. [Adult Education Level](#), OECD, 2019.

graduate from a tertiary programme, compared to an OECD average of 57 per cent.⁴⁷ German tertiary-educated students are also more likely to progress to a master's or doctoral degree than in other OECD countries.⁴⁸

From October 2014, tuition fees at public universities for both local and international students were cancelled following widespread backlash to the introduction of €1,000 tuition fees across the Länder. However, the Baden-Württemberg state government announced the reintroduction of a tuition fee of €1,500 per semester to non-EU international students from autumn 2017. While tuition at public universities is free, there is a mandatory administrative semester fee charged to undergraduates to cover administration costs and the funding of cafeterias, sports areas, some travel and residential homes. Fees can vary between universities and range from €150 to €350 per semester.

Students may receive support under the German Federal Training Assistance Act (Bafög) funding programme, and funding may be withdrawn if students change course, fail to complete a course or take too long to graduate. Although most postgraduate degree studies do not incur tuition fees, German higher education institutions have the prerogative to charge for some courses such as second or additional degrees and non-consecutive masters. Studies at private institutions also incur fees.

A public funding review by the European University Association (EUA) surveyed 34 European higher education systems and found public funding in Germany increased for universities by 2.3 per cent in 2017.⁴⁹ However, Germany was identified as one of seven countries where the education system is developing “under pressure” because the public funding growth rate was slower than the student growth rate.

Germany has a long tradition of study in the fields of science, technology, engineering and mathematics (STEM) and this has been key in fuelling the country's tech-based economy. STEM subjects are the most popular studies in Germany, and the nation has the highest share of recent tertiary graduates in these fields among all OECD and partner countries (37 per cent).⁵⁰ Women are under-represented in most of the STEM fields, making up only 28 per cent of new students. Among those with tertiary degrees ages 25-64, 26 per cent studied the fields of engineering, manufacturing and construction, the second highest share among all OECD and partner countries with available data. Among STEM fields, engineering, manufacturing, and construction account for 26 per cent of tertiary graduates in Germany. Though interest in these particular STEM fields may be waning (they accounted for just 22 per cent of graduates in 2017), other STEM fields such as natural sciences, mathematics and statistics, and ICT have seen positive developments.⁵¹

Business, Administration and Law is the second-most popular broad subject area tracked in Germany, accounting for 23 per cent of recent graduates (the OECD average is 24 per cent); in most OECD nations this field is the most popular. Arts and humanities account for 12 per cent of recent graduates while 10 per cent studied education.⁵²

In line with wider European trends, Germany has seen a rise in English-taught programmes (EMIs). Across the country 215 education institutes offer EMIs, a significant proportion of which tend to be offered at master's level.⁵³ The rise of EMI's signal a deliberate strategic component of Germany's internationalisation and may absorb some demand for foreign study.

⁴⁷ [Education at a Glance 2019: OECD Indicators](#), OECD, 2019.

⁴⁸ [Education at a Glance 2019: OECD Indicators](#), OECD, 2019.

⁴⁹ [EUA Public Funding Observatory 2019](#), European University Association, March 2019.

⁵⁰ [Germany, in Education at a Glance 2019: OECD Indicators](#), OECD Publishing, 2019.

⁵¹ Ibid.

⁵² OECD latest available figures from 2015.

⁵³ [“International Programmes in Germany 201/20”](#), DAAD, 2019.

Key policies related to education

Government expenditure on education accounted for 4.1 per cent of GDP in 2018, compared to an average of 4.6 per cent across the EU.⁵⁴ The government has prioritised increased spending on education with funds allocated to the Länder enabling them to develop their local education systems, especially nurseries and full-time and professional training centres. Additional funds are provided to support the Länder with the costs related to integrating refugees.

Another priority is increasing digital competence and skills across all levels which is part of a comprehensive digital policy adopted in 2014. The digital strategy of the Ministry of Education and Research launched in 2016 features the DigitalPakt#D which includes investment in digital infrastructures for general and professional schools. Ultimately, the objective is to improve digital infrastructure and support in schools and implement a national life-long learning strategy to facilitate technology adoption and strengthen ICT skills.⁵⁵ This was followed up in 2019 with DigitalPakt Schule, under which the federal government and Länder will provide a total of at least €5.5 billion to equip schools with high-quality digital technology between 2019 and 2024.⁵⁶

The government launched Berufsbildung 4.0 (Vocational and Educational Training 4.0, or VET 4.0) in 2016 to identify the impact of digital change on qualification requirements and develop recommendations for regulatory action, support vocational training centres in the acquisition of digital hardware and software, and fund innovative approaches for the use of digital media in vocational education and training.⁵⁷ The government also has plans to modernise VET training, making programmes more appropriate to meet demands in the labour market in the fields of digitalisation, automation, technology and sustainability.⁵⁸

The Excellence Strategy sought to revitalise Germany's Higher Education landscape and was launched in 2018 off the back of the country's Excellence Initiative. The Strategy designates €533 million for German institutes to fund cutting-edge research with two primary funding lines; Excellence Clusters which provides project-related funding in internationally competitive fields of research, and Universities of Excellence which sets out to strengthen German universities' international position in research.

The federal government adopted the Future Treaty Strengthening Studies and Teaching in June 2019, the successor to the Higher Education Pact 2020, which aims to improve the quality of study and teaching in HEIs, improve university access and diversity, and increase the use of digital media. In total, the federal government and the Länder governments will provide 3.8 billion euros annually until 2023 and 4.1 billion euros annually from 2024 onwards for the promotion of studies and teaching.⁵⁹

The Quality Pact for Teaching initiative is a joint programme of the Federal Government and the Länder to improve study conditions and the quality of teaching for students at institutions of higher education. The Pact also supports the creation of additional places for university entrants and has received up to €2 billion in funding across 186 German institutions. The Quality Pact was bolstered in 2019 with the Federal-Länder agreement for Innovation in Higher Education Teaching.⁶⁰

The government has made efforts to support research for digital change and adaptation and established the German Internet Institute (GII) in 2017. The Ministry of Higher Education and Research pledged €50 million over five years to the Berlin-based institute, which consists of a consortium of seven institutions and conducts interdisciplinary research on the ethical, legal, economic and social

⁵⁴ Education and Training Monitor 2019: Germany, *European Commission*, 25 August 2019.

⁵⁵ [Industry 4.0 and Working World 4.0 in Germany](#), VET4.0, 2016.

⁵⁶ [Fostering the creative use of new technologies](#): Germany, Education, Audiovisual and Culture Executive Agency of the European Commission, 19 November 2019.

⁵⁷ Education and Training Monitor 2019: Germany, *European Commission*, 25 August 2019.

⁵⁸ Ibid.

⁵⁹ [National Reforms in Higher Education – Germany](#), *European Commission Eurydice*, 27 December 2019.

⁶⁰ Ibid.

aspects of the internet and digitalisation.⁶¹ The Einstein Centre Digital Future is an inter-university research hub on digitalisation that supports innovative interdisciplinary research and connects universities, non-university research institutes, and industrial enterprises, as well as regional and federal ministries.⁶²

Another priority is to improve the integration of immigrants and refugees through foreign qualification recognition and increased federal funding of relevant education and training including integration courses and vocational language learning programmes.⁶³ By the end of 2018, it is estimated that a total of about 32,000 course places were made available at German universities as part of the DAAD refugee programmes.⁶⁴ Germany has made concerted efforts to even the field for disadvantaged and low-performing students, such as a new law introduced in January 2019, to increase access to higher education for socially disadvantaged students. Integrating students from a migrant background, students whose first language is not German and newly arrived refugees as early as possible is also a priority.

International student recruitment

Overall inbound trend

According to the German Academic Exchange Service (DAAD), 374,600 foreign students came to study in German tertiary institutes in 2018, far surpassing the goal to have 350,000 international students by 2020.⁶⁵ The top senders were China (36,915), India (17,294), Austria (11,130), Russia (10,795), Italy (8,908), and Syria (8,618).⁶⁶ The largest sending regions were Asia and Pacific, accounting for about 30 per cent, Western Europe at 19 per cent, and North Africa and the Middle East at 16 per cent. An increasing number of international students are coming from North Africa and the Middle East, rising by 34 per cent from 2017. Conversely, there was a 20 per cent drop in students from Sub-Saharan Africa. Most foreign students were enrolled in master's programmes, accounting for 40 per cent of enrolments in 2018, but 62 per cent of the international students at universities of applied science were in bachelor's programmes.

One of the major draws for studying in Germany is its tuition-free universities and favourable visa policies for finding employment after graduation. The country is also known for its scientific research and science programmes, and engineering accounts for the largest portion of enrolments at both universities and universities of applied sciences.⁶⁷

According to DAAD, more than 63,600 international students received funding for study in 2018.⁶⁸ Of these, 744 were from the UK.

Overall outbound trend

Germany is a keen supporter of outbound mobility and surpassed the goal of 50 per cent of graduates have some international experience by 2020 ahead of schedule. The next target is to have a third of all students going abroad spending at least three months or gaining the equivalent of 15 ECTS (the standardised system to ease the comparison of study attainment and higher education performance across the EU).

According to DAAD, the number of German students studying abroad has more than doubled since the 2000s when just 54,861 students pursued international study. In 2019, 144,900 tertiary-level students

⁶¹ [A Warm Welcome to the German Internet Institute](#), *Association of Internet Researchers*, 2 June 2017.

⁶² [Einstein Center Digital Future - About Us](#), *Einstein Center Digital Future*.

⁶³ ["Integration of refugees in Austria, Germany and Sweden: Comparative Analysis"](#), *European Parliament*, 2017.

⁶⁴ [Wissenschaft weltoffen 2019](#), DAAD, 2019.

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*

⁶⁷ [Wissenschaft weltoffen 2019](#), DAAD, 2019.

⁶⁸ [DAAD 2018 Annual Report](#), German Academic Exchange Service, 2019.

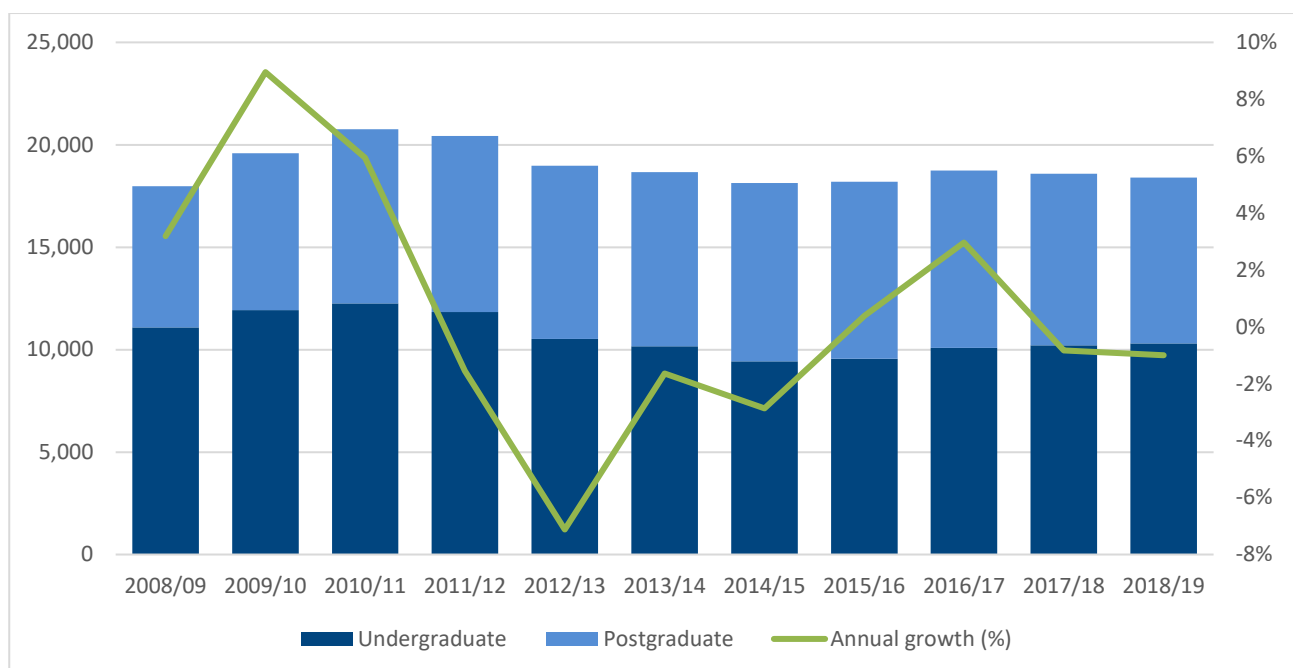
from Germany studied abroad, an increase from 137,700 in 2018. The major destinations for German students studying for degree qualifications are Austria, the Netherlands, the UK, Switzerland, and the United States.⁶⁹ More than 45,000 German students studied abroad via the Erasmus+ programme in 2018.⁷⁰

In 2018, 81,508 German students received funding from DAAD to support study abroad in the form of individual funding, project funding, or the EU mobility programme.⁷¹ Of them, 7,271 were in the UK.

UK recruitment

According to HESA data there were 18,405 students from Germany enrolled in higher education institutions in the UK in 2018/19, a 1 per cent decrease from the previous academic year. More than half (56 per cent) were pursuing an undergraduate degree while 44 per cent were enrolled in postgraduate programmes.

Figure 5: UK HE Enrolments from Germany



Source: HESA

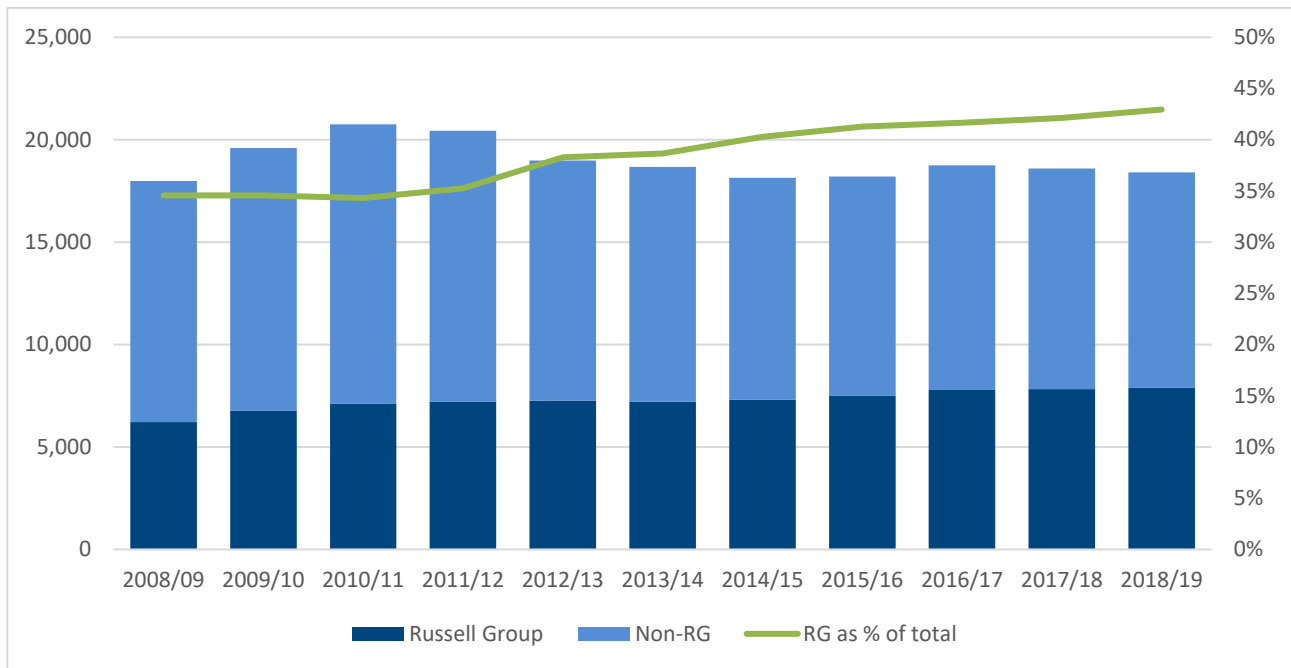
Student numbers to the UK peaked at 20,755 in 2010/11, decreasing to under 19,000 after the undergraduate fee increases. Since 2012/13, total enrolments have consistently stayed below 19,000 but above 18,000, contracting by 1 per cent in 2018/19. Just over half (56 per cent) of German students enrolled in the UK are undergraduates, a trend that has remained overall stable in the last decade, though the proportion of postgraduate students has increased. Postgraduate enrolments have increased overall by about 17 per cent since 2008/09, and now account for 44 per cent of total enrolments, up from 38 per cent in 2008/09. Undergraduate enrolments declined from a peak of 12,255 in 2010/11 to a low of 9,425 in 2014/15. Since then, they have slowly rebounded to reach 10,310 in 2018/19.

⁶⁹ [Project Atlas: Germany](#), Institute for International Education Project Atlas, accessed 14 April 2020; The latest available data on German students in the United States is from the 2016/17 academic year.

⁷⁰ [NA DAAD publishes Erasmus+ annual report 2018](#), German Academic Exchange Service (DAAD), 20 May 2019.

⁷¹ [DAAD 2018 Annual Report](#), German Academic Exchange Service, 2019.

Figure 6: German Enrolments in the UK: Russell Group vs. the Rest



Source: HESA

Russell Group enrolments have steadily increased since 2007/08 and accounted for 43 per cent of enrolments in 2018/19, up from 35 per cent a decade earlier.

Organisations such as Universities UK are working to get the necessary government support that will help “secure an effective post-Brexit settlement where universities can maximise their contribution to a globally-successful UK.”⁷² Other efforts include lobbying to ensure future UK access to Erasmus+ and successor schemes.⁷³

A 2018 report from University College London by the Centre for Global Higher Education and ten partners sought to identify how the potential impact of Brexit was understood across the sector. The UK was predicted to be the hardest-hit. There were encouraging signs about the future with findings indicating that commitment to cooperation in higher education in general, and especially in research, was strong and that Brexit would not derail collaboration.⁷⁴

Subject areas

Business and administrative studies is by far the most popular subject area for both postgraduate and undergraduate students, with 1,920 postgraduate enrolments and 2,180 undergraduate enrolments in 2018/19. However, the next most popular subject areas for undergraduates are computer science and languages, whereas for postgraduates are social studies, and engineering and technology.

Over the last five years, undergraduate enrolments have steadily increased in social studies, computer science, creative arts and design, medicine and dentistry, and mathematical sciences. In particular, computer science enrolments have increased dramatically, by 17.6 per cent in 2017/18 and 8.6 per cent in 2018/19. In contrast, undergraduate enrolments in engineering and technology and combined

⁷² [Policy priorities to support universities to thrive post-exit](#), Universities UK, March 1 2018.

⁷³ [Parliamentary briefing: backbench business debate on Erasmus+](#), Universities UK, June 20 2018.

⁷⁴ [Higher education and Brexit: current European perspectives](#), The Centre for Global Higher Education, February 2018.

have decreased over the last five years. Enrolments in languages have stagnated, even decreasing by 4.1 per cent in 2018/19.

Postgraduate enrolments overall fell in 2018/19, resulting in most subject areas declining in popularity. However, computer science enrolments have increased steadily over the last five years, growing 18 per cent in 2017/18 and by 4.2 per cent in 2018/19. Though business and administrative studies is still by far the most popular area of study for postgraduates with 1,920 enrolments in 2018/19, this was still a 9 per cent decline from 2017/18 and the third consecutive year of decline.

Figure 7: Changes in New UK Enrolments by Subject Area (Students Domiciled in Germany)

	Total new UK enrolments in 2018/19	Undergraduate			Postgraduate		
		New UK enrolments in 2018/19	Change from previous year	5-year trend	New UK enrolments in 2018/19	Change from previous year	5-year trend
Business & administrative studies	4100	2180	-1.4%		1920	-9.0%	
Biological sciences	1550	915	-1.6%		635	-0.8%	
Social studies	1535	430	7.5%		1105	-6.8%	
Computer science	1510	1135	8.6%		375	4.2%	
Engineering & technology	1465	725	-0.7%		740	-3.3%	
Languages	1450	1050	-4.1%		400	5.3%	
Creative arts & design	1160	790	3.9%		370	-7.5%	
Physical sciences	980	420	2.4%		560	-3.4%	
Law	765	390	2.6%		375	10.3%	
Combined	730	700	-7.3%		30	-33.3%	
Historical and philosophical studies	710	385	2.7%		325	6.6%	
Medicine & dentistry	490	260	10.6%		230	15.0%	
Education	435	215	10.3%		220	-6.4%	
Subjects allied to medicine	400	145	3.6%		255	-8.9%	
Mass communications and documentation	395	250	4.2%		145	-12.1%	
Mathematical sciences	375	110	10.0%		265	8.2%	
Architecture, building & planning	230	135	12.5%		95	0.0%	
Agriculture & related subjects	70	30	50.0%		40	-11.1%	
Veterinary science	15	5	-50.0%		10	0.0%	

Source: HESA

Competitor activity

The UK ranks as the second most popular destination for outbound German students and as the top English-speaking destination, according to the most recent official data.

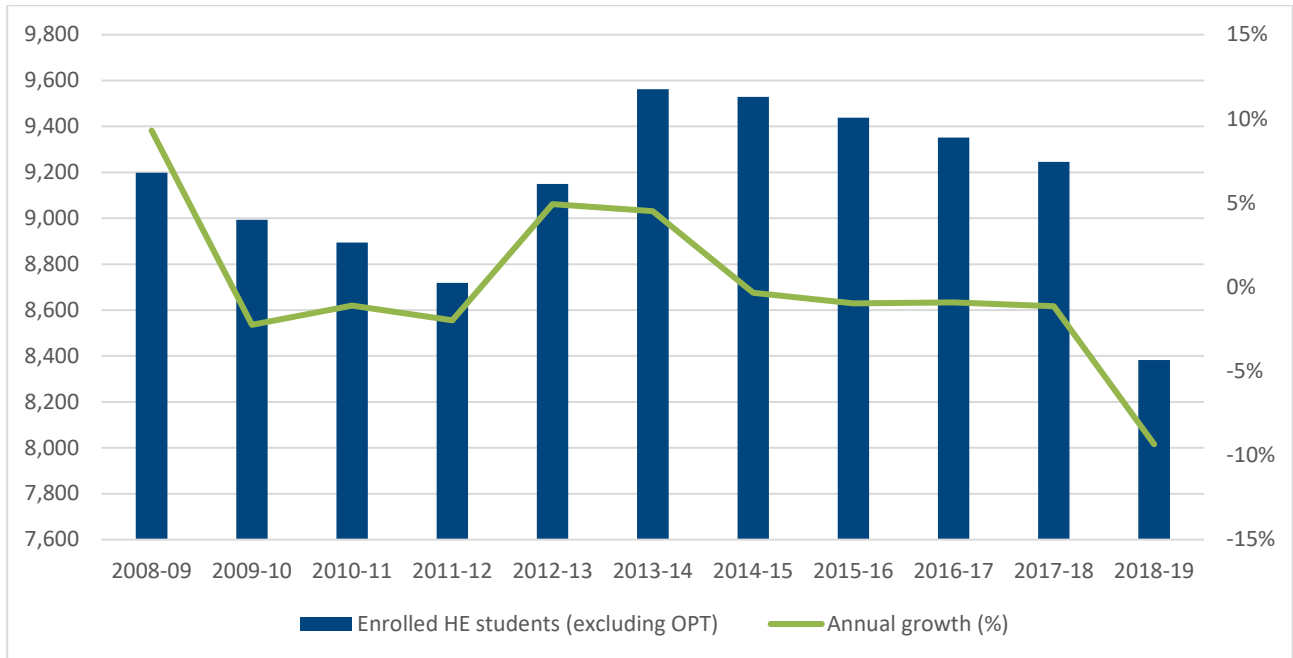
United States

In the 2018/19 academic year, 8,383 German students were studying in the US, a 9 per cent decrease from the previous year.⁷⁵ Student numbers peaked in 2000/01 when there were more than 10,000 students in the US, after which there was some fluctuation before reaching a new peak in 2013/14. In 2018/19, 34 per cent of German students in the US were enrolled in undergraduate programmes, 27 per

⁷⁵ [Open Doors Places of Origin](#), Institute of International Education, 2019.

cent were graduate students, and about 31 per cent were enrolled in non-degree programmes. After finishing their studies, 9 per cent of students commenced Optional Practical Training – a form of post-study visa that allows up to 12 months of temporary employment directly related to a student’s area of study.

Figure 8: Germany’s HE enrolments in the US (excluding OPT)

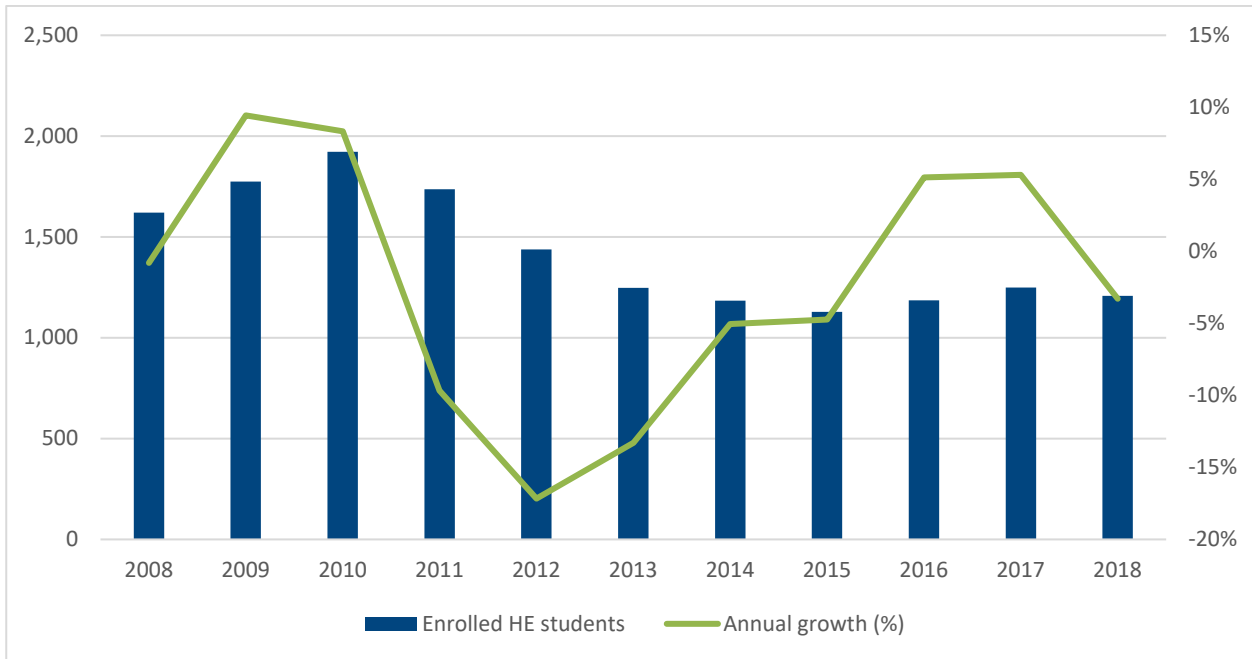


Source: IIE

Australia

In 2018, Australia hosted 1,208 tertiary-level students from Germany, a 3 per cent decline from the previous year. The number of German students enrolled in Australian HE institutions was approximately 37 per cent lower than it was at its peak in 2010.

Figure 9: Germany’s HE enrolments in Australia

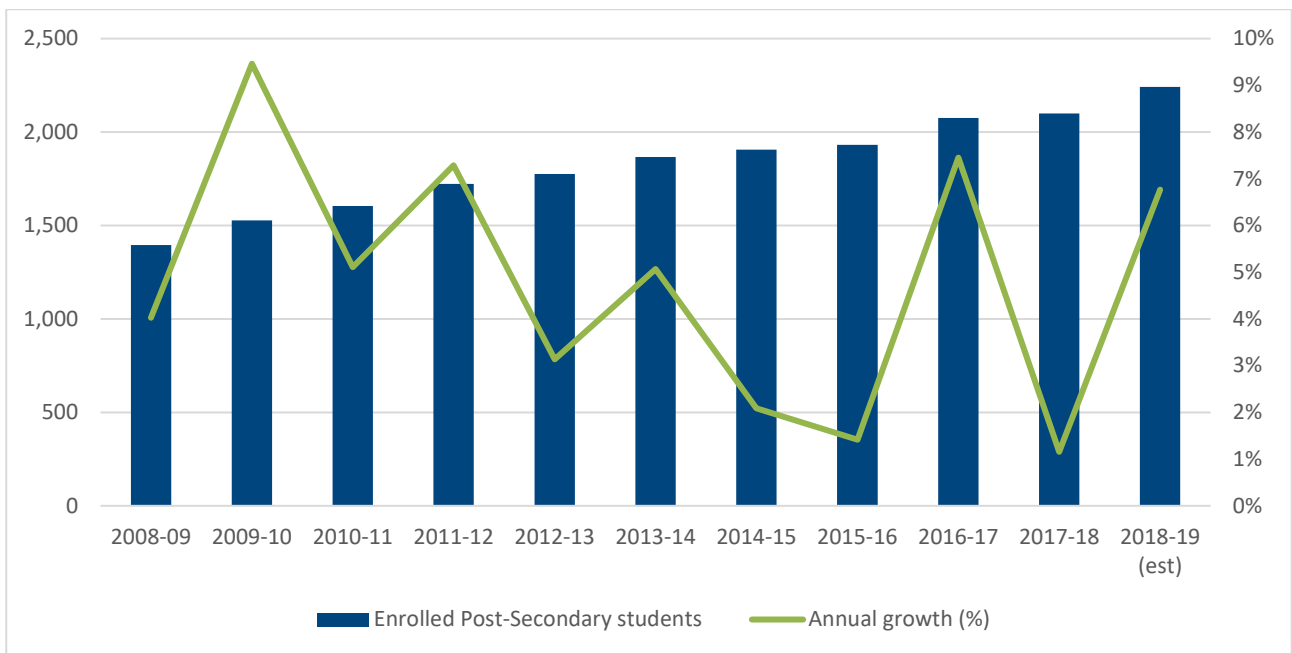


Source: AusTrade

Canada

Canada hosted an estimated 2,242 HE students from Germany in 2018/19. In 2014, the Canadian federal government launched the International Education Strategy (IES), which aimed to double the number of international students and researchers in Canada to more than 450,000 by 2022. While the plan was focused on promoting Canada in a selection of developing markets, Canada has since seen enrolments from a wide selection of countries rise.

Figure 10: Germany’s HE enrolments in Canada



Source: StatCan (enrolments); IRCC (growth in study permits)

Transnational education

The German Academic Exchange Service (DAAD) began promoting TNE in 2001, and there is an increasing number of dual degree and double degree programmes both in Germany and abroad.⁷⁶ In 2018, there were 276 German TNE programmes offered in 35 countries around the world, and there were 32,000 students enrolled in German TNE programmes worldwide.⁷⁷ Domestically, there were more than 2,000 international programmes on offer. Germany is a popular choice for overseas partner organisations, distance, flexible, or distributed learning, and collaborative provisions.⁷⁸

Germany ranked third in the number of students attending UK TNE programs in 2017/18, after Cyprus and Greece, with 5,220 students. Germany is among the fastest-growing TNE markets for the UK, increasing 36 per cent from 2013/14.⁷⁹ In Germany, UK TNE activity has increased, but the varying regulations between Länder make it a tricky market to break into. In 2019 the University of Lancaster opened a Leipzig campus, the first public UK university to establish a campus in Germany. The campus will offer degrees in business and management, accounting and finance, software engineering, and computing in English.⁸⁰

In 2017/18, there were 2,920 UK students enrolled in undergraduate TNE programmes in Germany and 2,300 UK students enrolled in postgraduate TNE programmes, ranking as the second and third most popular destination for UK TNE students.⁸¹

⁷⁶ [Transnational Education in Germany](#), German Academic Exchange Service, 2014.

⁷⁷ [DAAD 2018 Annual Report](#), German Academic Exchange Service, 2019.

⁷⁸ [The scale of UK higher education transnational education 2017-18](#), *Universities UK*, 6 November 2019.

⁷⁹ [The scale of UK higher education transnational education 2017-18](#), *Universities UK*, 6 November 2019.

⁸⁰ [Lancaster University opens Leipzig campus amid Brexit fears](#), *BBC*, 8 February 2019.

⁸¹ [The scale of UK higher education transnational education 2017-18](#), *Universities UK*, 6 November 2019.