

Chapter 1. An overview of the higher education system and its components

This introductory chapter provides an overview of the higher education system, in Austria. It describes the institutional diversity that characterises the system, and presents the main actors and the funding arrangements for education and research, which represent the framework conditions for the entrepreneurship and innovation agenda. The chapter discusses the reforms Federal authorities have been implementing in the field of higher education and, in particular, to connect higher education institutions with economy and society.

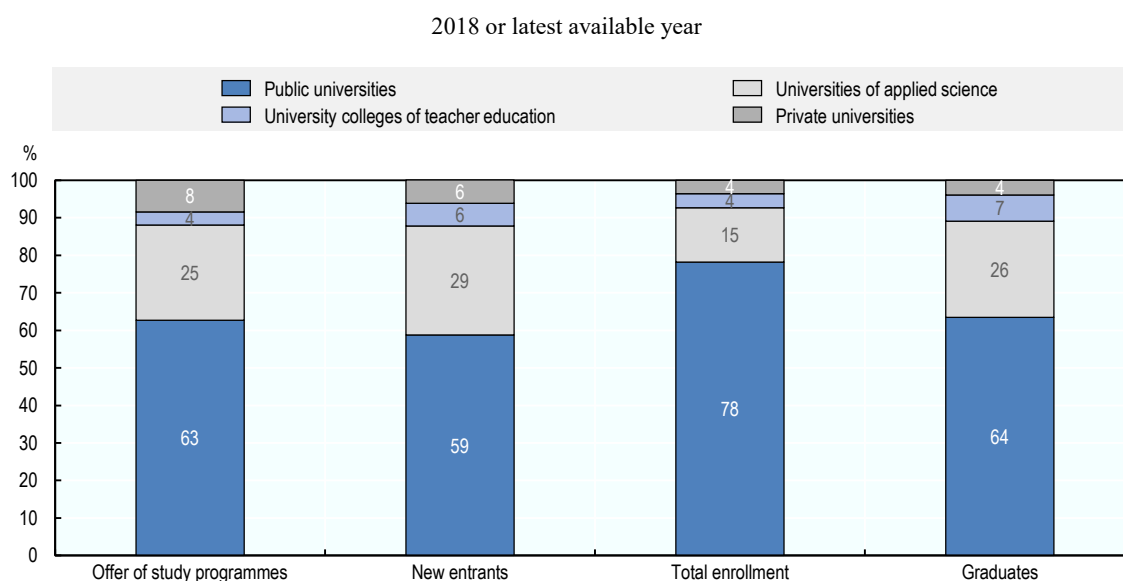
The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Describing the Austrian higher education system

Austria is home to an important higher education (HE) system that has been evolving to adapt to changing framework conditions. Over the past 25 years, several reforms have triggered a process of institutional differentiation. Among others, reforms have introduced important innovations such as universities of applied sciences (UAS), which focus on vocational-oriented academic training and applied research, and private universities. The reform process is still ongoing and the federal legislator has played a key role by defining rules and financing, and promoting policy dialogue.

The Austrian higher education system consists of four sectors, which are uneven in size. There are 22 public universities, 21 universities of applied sciences (*Fachhochschulen*, UAS), 16 private universities and 14 university colleges for teacher education.¹ Public universities alone represent about 80% of the overall students enrolled in tertiary education. The second largest HE sector is that of UAS. University colleges for teacher education and private education have just a small part of students and offer a small number of programmes (Figure 1.1).

Figure 1.1. Share of new entrance, study programmes, enrolment and graduates across different higher education institutions (HEIs) in Austria



Note: Offer of study programmes: winter semester 2017; New entrants: academic year 2017/18; Enrolment: winter semester 2017; Graduates: academic year 2017/18.

Source: BMBWF unidata, Statistics Austria <https://oravm13.noc-science.at/apex/f?p=103:36>.

Public universities

Public universities hold more than three-quarters of students enrolled in higher education. Public universities encompass very large actors such as the University of Vienna. Founded in 1365, it is the oldest and largest university in the German-speaking world, counting 91 715 students in 2018. Other important public universities are located in Graz, Innsbruck, Klagenfurt, Linz and Salzburg. There are also several technical universities, medical universities and specialised universities, including the University of Natural Resources and Life Sciences of Vienna, the Vienna University of Economics and Business, and the

University of Veterinary Medicine of Vienna. Universities of arts are other public universities.

Universities of applied sciences

Universities of applied sciences focus on vocational-oriented education and applied research. Austria introduced the University of Applied Sciences Studies Act (*Fachhochschul-Studiengesetz*, FHStG) in 1993. Political reasons to introduce a new professionally oriented sector of tertiary education were to facilitate the diversification of higher education degree programmes and to bridge the gap between academic institutions and the job market. A further intention was to facilitate and enable access to tertiary education to under-represented groups, such as first-in-family or working students. Since its creation, the UAS sector has grown in importance and size. UAS generate new programmes every year, to match the large and diverse demand of highly skilled individuals on the national and international labour markets.

Public or private institutions can obtain accreditation from the Austrian Agency for Quality Assurance and Accreditation (AQ Austria) as a university of applied sciences. Providers can be funded by regions, municipalities or chambers of commerce, etc. The Federal Ministry of Education, Science and Research funds study places within UAS study programmes, not the institutions themselves.

UAS operate in osmosis within their own ecosystems and their study programmes have to reflect the skills needs of their vocational fields. UAS have to undergo accreditation for each study programme as well as initial accreditation for the institution itself. Once approved, curricula of study programmes can evolve to meet the trends and requirements in the relevant vocational fields of activity, based on a permanent dialogue with employers. UAS bachelor curricula include a mandatory internship, forging a strong bond between the UAS and firms/employers. This model is also proving increasingly effective to address the growing demand for lifelong learning.

UAS also offer the possibility to enrol in so-called “dual study programmes” or work-co-operative programmes. These programmes, based on an agreement between UAS and companies, combine academic education at the higher education institution (HEI) and practical training in companies. Students in these programmes spend the first two semesters studying at the UAS. After this period, in most cases from the third semester, the training company hires them and they start to apply in practice what they have learnt in theory. Symmetrically, they project their practical experience in theoretical studies at the UAS. Public authorities have been promoting these co-operative programmes in recent years; in the academic year 2019/20, five Austrian UAS offer seven work-co-operative study programmes.

UAS select their students and, in some cases, ask for tuition fees (Kasparovsky and Wadsack-Köchl, 2015). The number of study places in each programme is limited. Therefore, when there are more applicants than places, there is the legal requirement to set up selective admission procedures. Acceptance of study programmes, however, is not constant. It varies depending on the region and the discipline. Therefore, some UAS have been reporting problems filling all of their available study places.

Private universities

Since their creation in 1999, private universities have been differentiating their offer and have added diversity to the HE system.² Today, there are 16 private universities and about

150 programmes ranging from social sciences and economics, law, medicine, psychology, theology, to art and music, etc. Private universities have also PhD programmes. Since 2012, private universities receive their accreditation from AQ Austria, the same body that provides accreditation to the UAS.

Currently representing about 3% of the total number of enrolled students, the sector of private universities has been developing fast over the past 5 years. These institutions have recorded the highest growth rates, showing an average increase of 9.2% in first-time students in 2017/18.

Private universities can receive public funds but there are some restrictions. The share of public funding to private universities amounts to roughly one-third of total funding. Private universities' funding structure is diversified with almost 60% of funding coming from private sources (including tuition fees) and around 10% from competitive third-party funds. Subnational authorities can provide financial support to private universities but the law forbids the federal government from providing funding and subsidies.

University colleges for teacher education

Teacher education in Austria has traditionally been the responsibility of public universities (lower and upper secondary school teachers, e.g. for *Gymnasium*-type schools and higher vocational schools) and colleges for teacher education (teachers for primary and lower secondary compulsory schools).

Recognising the importance of having highly skilled teachers, Austria put in place university colleges for teacher education in 2005. These colleges have replaced the post-secondary colleges for teacher training (*Akademien für Lehrerinnen- und Lehrerbildung*). The Austrian Federal Ministry of Education, Science and Research is also entitled to grant accreditation to private university colleges of teacher education and degree studies supported, for instance, by religious entities. University colleges for teacher education can implement training programmes for primary education independently. They have to co-operate with universities concerning training programmes for secondary school teachers.

Ongoing reforms affecting the structure of the HE system in Austria

Recognising the need to update constantly the HE system to make it able to respond to emerging trends and needs, the government has put in place several reforms. Among others, reform attempts have aimed to achieve a more balanced distribution of students across HE sectors. Examples of these reform attempts are the expansion of the UAS sector and the introduction of admission procedures for public universities in selected study fields. In particular, the federal ministry is aiming to change the distribution of students between the two largest sectors, public universities and UAS. The objective is to have 60% of students enrolled at public universities and 40% enrolled at UAS. According to national authorities, this new distribution should generate a twofold improvement in the system, on the one hand, improving the faculty-student ratio in study fields with high demand and on the other, more students benefitting from the good performance of UAS regarding completion rates, study duration and graduate employability rates.

Based on these, the federal ministry has been putting measures in place to favour the reallocation of students in the HE system. For example, the ministry financed 450 new study places at UAS in the academic year 2018/19. These new places are in science-technology-engineering-mathematics (STEM) subjects related to digital transformation.

Another recent federal initiative promoting a more efficient equilibrium within the HE sector is the Future Higher Education project. The federal ministry launched this project in the spring of 2016, aiming at:

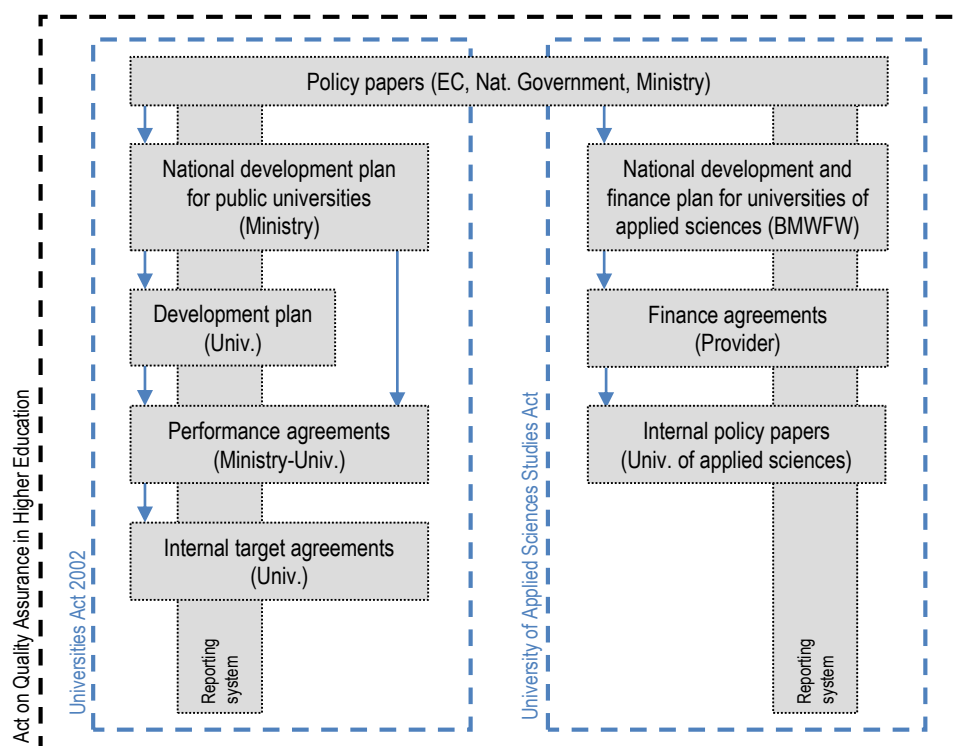
- Emphasising the educational profile of public universities (scientific/artistic education and lifelong learning) and UAS (practice-oriented education at higher education level).
- Structuring and adjusting the range of study programmes on offer.
- Improving the permeability in tertiary education.

The results of the “Future of Higher Education” project were included in the Comprehensive Austrian University Development Plan, the performance agreements 2019-21 with public universities as well as in the development and funding plan for UAS 2018/19-2022/23.

Governance arrangements in different sectors of higher education institutions

The governance of the Austrian HE system reflects both the autonomy of HEIs and the presence of different kinds of sectors and institutions. In particular, due to the sectoral structure and student distribution, the system has developed two kinds of governance arrangements: one for public universities and the other for UAS.

Figure 1.2. Policy instruments for planning and steering Austrian higher education



Source: Ecker, et al. 2017.

The governance of public universities

Concerning governance, public universities are autonomous and negotiate their performance agreements with the federal ministry. This arrangement has evolved over time. Public universities used to be state agencies managed by the federal ministry. In 2002, the University Act introduced autonomy and the adoption of a new public management approach, based on a more managerial, corporate-style approach.

To cope with the governance system, executive decision-making structures have been strengthened at the expense of traditional academic collegial bodies (Pechar and Park, 2017). In particular, a university council (*Universitätsrat*) composed of external experts supervises and controls the rectorate of the university. Members of the university council are appointed in equal shares by the academic senate and the federal government. This governing board appoints the rector from a shortlist of three candidates proposed by the senate. The rector – formerly a *primus inter pares* elected by the academic senate – now acts as the executive manager of a “corporate” university. The rector directly appoints a team of vice-rectors together forming the rectorate as a decision-making entity. In addition, the position of deans as heads of faculties has been strengthened. Academic senates have conserved their powers concerning curricular matters, which remains a relevant responsibility.

The Austrian University Development Plan (GUEP) regulates the relationship between public universities and the federal government/ministry. The GUEP, issued in 2015 and re-drafted in 2017, sets the priorities for the development of public universities and defines a range of planning parameters for teaching (e.g. indicators for enrolment, actively enrolled students, degrees, student/teacher ratios) with the aim to promote transparency.

The federal ministry and public universities negotiate goals and funding based on “institutional strategic plans”. In these plans, universities have to formalise their strategic development outlining medium- and long-term strategic goals. These plans serve as benchmarks for the negotiation of “performance agreements”. Performance agreements are public contracts between the individual university and the federal ministry, covering a period of three years and detailing specific goals the HEI has to meet regarding personnel, research and teaching. Based on these goals, the federal ministry and the university “agree” on a budget.

HEIs have to report to the federal ministry every year on the state of implementation. HEIs report to the government using a “knowledge scoreboard” (*Wissensbilanz*), which includes both qualitative and quantitative indicators. Based on “knowledge scoreboards”, the federal ministry draws up a comprehensive report about the performance of all universities and presents the results to the Austrian Parliament every three years. If HEIs fail to meet the targets defined in the performance agreements, the federal ministry discusses “adequate corrections and consequences” in the following cycle of negotiations.

For example, the last capacity-based university funding, introduced with the performance agreement period 2019-21, has strengthened the steering capacity of performance agreements with the aim to improve their effectiveness. The relation between matching of the objectives defined in the performance agreement and the level funding received from the government has been strengthened.

The governance of universities of applied sciences

UAS enjoy a different governance system than that of public universities.³ A first important difference, laid down in the UAS Studies Act (Fachhochschul-Studiengesetz, FHStG), is

the possibility for the private sector to participate in the design and delivery of higher education. In fact, UAS are organised as public-private partnerships with the aim of facilitating innovation in study programmes, which reflect the skills needs of the economy.

In some cases, the governance arrangements of UAS can generate conflicts between different functions. Most UAS operate as private companies⁴ and, as such, a chief executive officer (CEO) manages the UAS like a private company. However, the CEO is responsible for the “academic leadership” of the UAS, represented by the elected head of a collegial body – the “*Kollegium*” – composed of academics and student representatives.

Unlike public universities, UAS have only to fulfil the requirements stipulated by law to access funding and accreditation. The Ministry of Education, Science and Research funds and allocates UAS study places. Public or private providers in charge of UAS need to apply for initial accreditation as an HEI. In particular, they need to apply to AQ Austria for each study programme they aim to implement.⁵ To gain the accreditation of their programme, among other requirements, providers have to illustrate labour market demand (demand and acceptance analysis). In addition, they have to prove having the required staff, facilities and equipment to implement the programme. Finally, providers have to estimate the average cost per study place and generate a financial programme for the duration of the approval. Peer experts evaluate the submitted study programme in a procedure designed in compliance with the European Standards and Guidelines (ESG) for the European Higher Education Area (EHEA).

Finally, the link between UAS and local authorities represents another important difference in the governance system, vis-à-vis public universities. For instance, provincial and municipal governments are closely involved in several UAS governing boards. Their presence in the governing bodies of UAS generates a strong bond between the institutions and their own ecosystems.

The governance of university colleges for teacher education and private universities

University colleges for teacher education follow their own governance arrangements. University colleges are state agencies, subordinated and managed by the federal ministry. However, to facilitate operability, university colleges are equipped with a limited legal capacity, which allows them to conclude certain legal transactions. The management of these institutions responds to performance contracts, signed between the federal ministry and each university college for a period of three years.

Private universities are less dependent on the control of the federal ministry. However, the Private University Act requires that private universities receive accreditation from AQ Austria. To receive this accreditation, private universities have to guarantee, among others, that academics enjoy sufficient autonomy in teaching and research. For the first two consecutive accreditation periods, accreditation is granted to private universities for six years. After the first 2 periods, private universities can receive 12-year accreditation.

Recent reforms in the admission system and impact on funding regimes

There are different systems regulating access to higher education in Austria. The open admission policy that entitled all students with *Matura* – secondary school diploma – to enrol in any programme at any research university was changed in 2005 when the European Court of Justice ruled against Austria's decision to limit open admission to Austrian citizens only.⁶ Therefore, federal authorities have introduced access regulations at public universities, with entrance examinations in some disciplines such as medical studies. However, enrolment at universities of the arts traditionally required entrance examinations to prove artistic talent. Likewise, concerning UAS, selection mechanisms were already in place since the 1990s. At both UAS and university colleges for teacher education, student admission depends on the number of available study places. Private universities have been regulating access to their programme since their creation.

Federal authorities have introduced a series of reforms to regulate access to specific fields of study at public research universities over the past decade. For example, in addition to existing access restrictions in medicine, new access regulations were introduced in 2013 in popular fields of study such as architecture, biology, computer science, pharmacy and business. Within this regulatory framework, public universities are free to decide on the implementation of access procedures.

The reform of access regulations to higher education is still evolving and introducing a certain degree of flexibility in the system. Since 2018, for example, access regulations affect fields of study such as education, languages and law. The 2018 reform has enabled public universities to introduce entrance examinations in case there is a high number of applicants for specific study programmes.

Funding mechanisms

Funding mechanisms are different for the various sectors of higher education in Austria. For instance, public universities receive funding based on the outcome of negotiations with the Federal Ministry of Education, Research and Science: a performance agreement. Before 2019, the federal ministry allocated funding to public universities in the form of a lump sum budget. Universities were (and still are) free to use these funds. However, they have to fulfil the objectives agreed upon with the federal ministry in their own performance agreements.

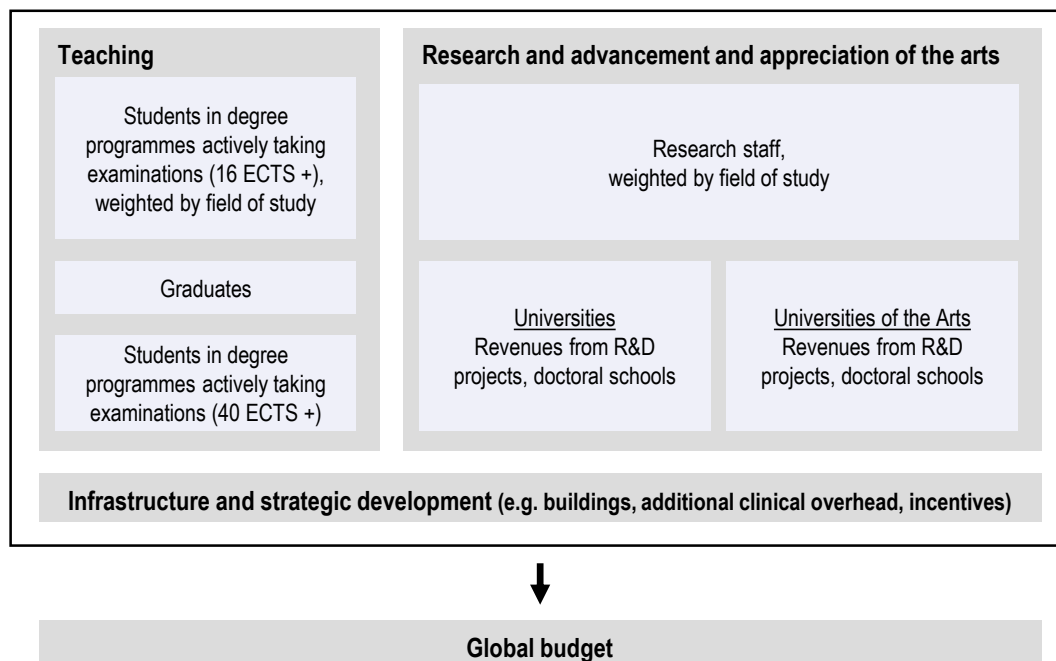
The 2018 reform has introduced a new capacity-based, student-related funding system (see Figure 1.3). In the past, due to the open admission policy, the federal minister did not allocate the lump sum to universities based on student numbers. After several attempts to reorganise the funding scheme in order to take into account the new admission policy, the federal government succeeded in amending the 2002 University Act. The performance agreements of 2019-20 are the first to function with the new funding system.

The federal ministry and public universities negotiate a budget allocation based on three pillars: teaching; research/arts; and infrastructure and strategic development. In particular, the negotiation of the instalment for teaching and research activities takes into account the following indicators:

- number of students in degree programmes actively taking exams
- number of faculty

- specific indicators such as the number of degrees awarded, fast students, third-party funds, structured doctoral studies.

Figure 1.3. The new university funding model



Source: Ecker, *et al.* 2017

The system funding UAS is quite different. For example, the federal ministry and UAS do not negotiate the number of study places. This depends on a development programme and available budget.⁷ The government funds a given number of study places and HEIs admit students based on this threshold. The ministry calculates funding rates based on “standard costs”. Funding rates cover 90% of the standard operating costs faced by UAS. As of 2019, the annual funding rates for different disciplines at UAS are:

- EUR 8 600 for study places in programmes that have a “technical component” (and then require some specific laboratories/infrastructure) of at least 50%
- EUR 7 420 for study places in courses in which the “technical proportion” is at least 25%
- EUR 6 950 for study places in courses focusing on tourism
- EUR 6 850 for study places in all other courses.

Providers have to co-fund for investing in buildings and other infrastructure. In most cases, co-funding depends on other public authorities, such as subnational authorities, including regions, local governments as well as economic chambers.

The federal government has been increasing the number of study places in UAS over the years. Study places have risen from 43 593 (2013/14) to 48 539 (2017/18). In academic year 2018/19, in line with the federal policy to improve enrolment in STEM disciplines, the government financed a further increase of 450 study places in UAS. In addition, the Future Higher Education project puts in place measures for the sustainable development of

study programmes and UAS locations. The federal government has enacted a new development and funding plan for UAS for academic years 2018/19-2022/23. This plan aims to create 1 450 new study places in UAS by 2025.

Public and private expenditure for higher education

Austria's expenditure on tertiary education amounts to 1.74% of GDP (2015). This puts the country above the OECD average of 1.52% and only slightly below the highest ranked European countries (Estonia 1.77% and UK 1.87%: OECD, 2018). In addition and in line with a national policy promoting science and innovation, Austria's public expenditure for higher education has been increasing in recent years. It totals EUR 4.26 billion (2017), of which EUR 3.52 billion – approximately 82% – funds public universities (Table 1.1). Funding for higher education is almost entirely public. Therefore, Austria is among the countries with the lowest percentage of private expenditures for higher education in the OECD (Figure 1.4).

Table 1.1. Higher education budget, including spending for universities, 2013-17

	2013	2014	2015	2016	2017
Higher education budget ¹ in EUR million	3 786	3 855	3 981	4 138	4 256
Change 2013 to 2017, 2013=100	100.0	101.8	105.2	109.3	124.1
Nominal change in relation to previous year					
<i>In EUR million</i>	134	68	126	157	118
<i>In %</i>	3.7	1.8	3.3	3.9	2.9
Including spending for public universities ² in EUR million	3 189	3 237	3 303	3 447	3 523
Regular students at public universities ³	273 280	277 508	280 445	280 783	278 052
Average spending per regular student in EUR million	11 670	11 664	11 777	12 275	12 672
Graduates at public universities ⁴	37 312	34 300	34 539	35 864	34 978
Average spending per graduate in EUR	85 476	94 367	95 622	96 102	100 733

1. University budget: UG 31 "Science and Research".

2. Expenditure for the UG 31 "Science and Research".

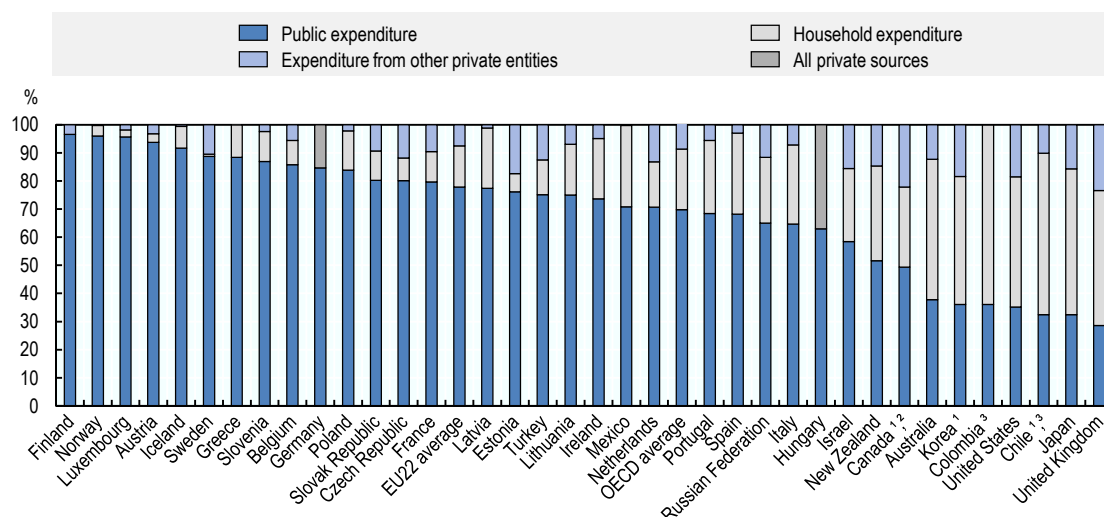
3. Students each winter semester.

4. Graduates each academic year, e.g. 2017: academic year 2016/17.

Source: Ecker, *et al.* 2017, BMBWF (2019)

Tuition fees

Austria had abolished tuition fees in 1970 but re-introduced those in 2001, before abolishing them again in 2006. To date, only two categories of students pay tuition fees to Austrian public universities: non-EU international students and students exceeding the regular duration of studies by two semesters. UAS may charge tuition (EUR 363 per semester), however, mostly for political reasons; some institutions waive tuition. Colleges for teacher education do not charge any tuition fees. Private universities charge tuition fees: they depend on this source of revenues because they cannot be funded by the federal government. However, about one third of private universities out of 16 are considered "provincial universities" and receive funds from provincial authorities.

Figure 1.4. Distribution of public¹ and private² expenditures for tertiary education, 2015

1. Excluding international sources.

2. Primary education includes data from pre-primary and lower secondary education.

3. Year of reference 2016.

Source: OECD (2018a), *Education at a Glance 2018: OECD Indicators*, <https://doi.org/10.1787/eag-2018-en>.

Third-party-funded research projects at universities

Third party funding to universities has been growing continuously over the past years. For instance – according to the universities' knowledge scoreboards (*Wissensbilanzen*), which provide information on the volume and source of funding at public universities – the share of third-party funding went from EUR 654.4 million in 2015 to EUR 670 million in 2016 and EUR 673.2 million in 2017.

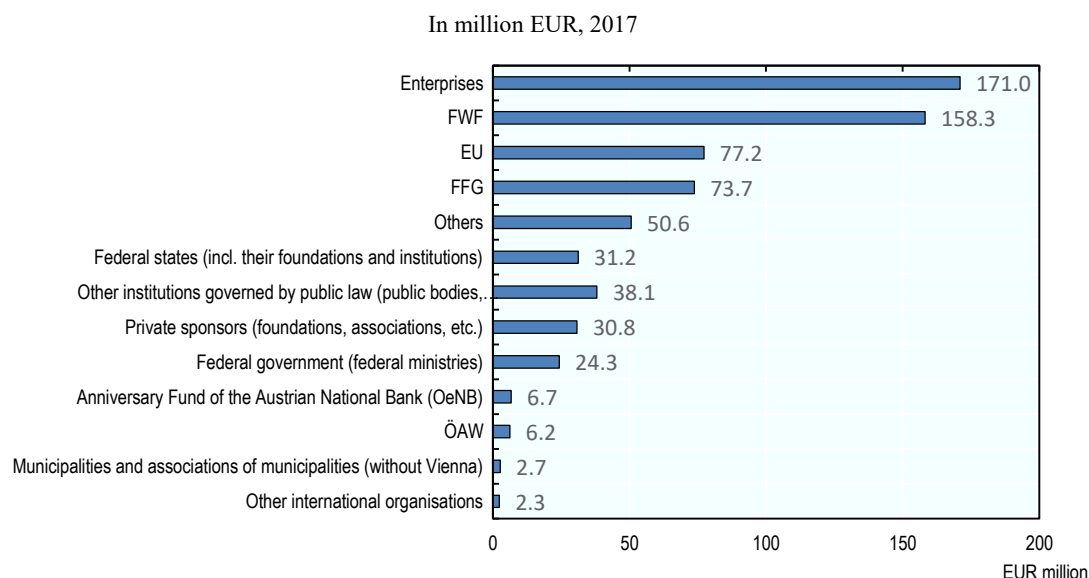
The origin of universities' third-party funds is heterogeneous in terms of both public financiers (e.g. ministries, local authorities, funding agencies) and private donors (e.g. businesses, foundations). In 2017, like in previous years, public funds (mainly provided by the Austrian Science Fund, FWF, and the Austrian Research Promotion Agency, FFG) as well as companies were the main source for third-party funded research projects, contributing more than a quarter of the total research revenues of Austrian universities (EUR 171 million or 25.3%). This also indicates the importance of co-operation between science and industry.

Concerning public research funding for Austrian HEIs, the FWF is responsible for funding basic research (EUR 158.3 million or 23.5% of total funds) while the FFG is the national funding agency for industrial research and development (EUR 73.7 million, 11.0% of total funds). Research funding from the European Union amounted to 77.2 million or 11.5% of total funds in 2017. While the share of funding provided by the FWF and the EU has recently declined in nominal terms, funding from the FFG rose considerably, from EUR 61.1 million in 2015 to EUR 73.7 million in 2017 (approximately 20% increase).

The distribution of third-party revenues varies widely according to the different research areas and disciplines. Overall, third-party funding of Austrian universities amounted to EUR 673.2 million in 2017. HEIs active in natural sciences received the largest share of third-party revenues: 31.9%. Third-party contributions have proved to be particularly important to support research staff at HEIs, particularly temporary assignments (temporary,

fixed-term employment). More than a third of staff at public universities and almost half of the staff at technical universities are employed on the basis of external funding.

Figure 1.5. Third-party funding through research projects at public universities by origin



Note: Austrian Science Fund (FWF); the Austrian Research Promotion Agency (FFG)

Source: Ecker, *et al.* 2017, BMBWF, unidata <https://oravml3.noc-science.at/apex/f?p=103:36:0::NO>.

UAS also receive third-party funding as these institutions are legally required to perform applied research, which is conducted in close co-operation with industry, businesses (SMEs) and other employers. In 2015, UAS received a research budget of EUR 104 million and employed 960 full-time equivalent (FTE) researchers (OECD, 2018b; see also Chapter 4 on Leadership and governance).

Reforms in doctoral education and academic careers

In recent years, there has been an ongoing discussion on how to promote career paths and how to improve the framework conditions for (early stage) researchers at Austrian universities. This debate affected the way in which Austrian HEIs organise and implement doctoral programmes. In addition, it affected the academic profession as a whole.

“The new doctorate” at Austrian universities

Doctoral education underwent a far-reaching transformation over the last ten years. The federal government has reformed this sector following the Salzburg principles and other European policy documents (European Commission, 2011).

A key milestone in the reform process is the introduction of the 3-year PhD in 2009. By 2018, all doctoral programmes at Austrian universities conform to the new standards of so-called “structured doctoral programmes”. Compared to the old “apprenticeship model” which was characterised by the strong role of the thesis supervisor (see Pechar, Ates and Andres, 2012), in the new model, doctoral candidates are considered early stage researchers. According to the Salzburg principles, they “should be recognised as

professionals – with commensurate rights – who make a key contribution to the creation of new knowledge”.

Doctoral training should provide a clear and transparent framework concerning admission, supervision and assessment, entailing clearly outlined milestones.⁸ Further, these programmes should help young scholars to get connected and to be active in a research environment from the beginning of their doctoral studies. The challenge of the new model is to strike a balance between providing structures and accountability on the one hand, while at the same time fostering independent research activity and integrating young researchers into the scientific community.

All Austrian public universities have adopted and adapted “structured programmes” over the last ten years. The Austrian federal ministry introduced budgetary leverage to promote structured PhD programmes in the last round of performance agreements. In particular, the government offered conditional funding for structured PhD programmes that conform to the newest standards. These standards include, *inter alia*, team supervision as well as the mandatory personal separation between supervisor and assessor. The number of PhD positions in structured programmes became a “competitive indicator”: the more PhD places in these programmes a university can offer, the more funds it would receive.

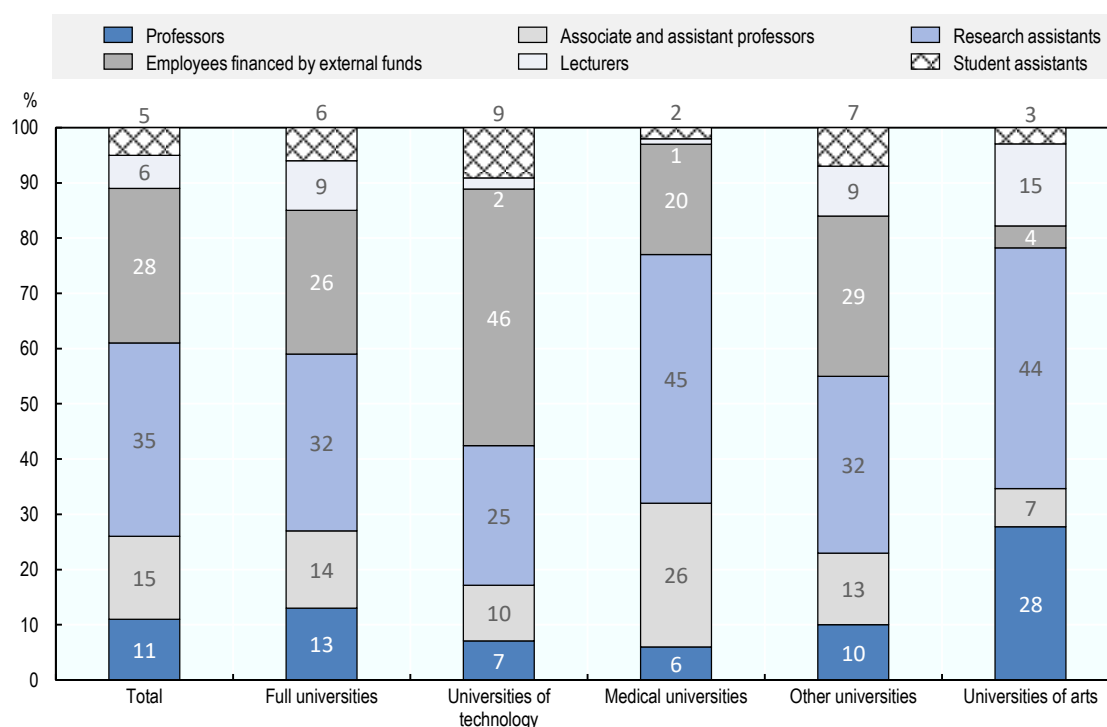
In addition, a 2017 amendment to the University Act made it possible to restrict access to doctoral programmes by introducing selection criteria on the part of the HEI. Many universities have since introduced “doctoral schools” or “doctoral academies” for specific thematic fields.

In addition, for UAS, a separate funding line for co-operative doctoral programmes has been recently established which can also be regarded as a first step in the direction of fostering academic careers and research and development (R&D) at UAS.

The academic profession

The terms of academic profession vary among the different sectors of the Austrian HE system. At public universities, faculty members are hired based on private employment contracts.⁹ Figure 1.6, below, provides information about the different status of faculty members across public universities.

The University Act of 2002 maintained the traditional German pattern of academic structures (*Habilitation* model) with an “unbridgeable gap” between professors and the rest of the academic staff. However, in 2009, a Collective Agreement for Universities entered into force, adding a new pathway to permanent, tenured employment. These new “tenure track” positions, called *Laufbahnstellen*, are based on so-called “qualification agreements” the candidate has to fulfil to advance into permanent employment as an “associate professor”. The qualification criteria laid out in the recruitment process and the evaluation of these positions show strong similarities to the North American tenure track. Until a 2015 amendment of the University Act, the Austrian tenure track did not lead to full professorship, however. Today, “associate professors” who were recruited on a competitive basis are allowed to vote in the status group of ordinary professors.

Figure 1.6. Academic status groups at different types of public universities in FTEs

Source: Ecker *et al* 2017.

The majority of academics employed at public universities, however, are employed in fixed-term positions, including:

- Part-time lecturers: fixed-term, renewable teaching assignments for the duration of one semester.
- Externally funded research positions (“project workers”): fixed-term, for the duration of a research project, both pre- and postdoctoral.
- Student assistants (below master’s degree level).

Key actors in the Austrian higher education system

Key actors including federal bodies and HEI institutions

Federal ministries

In Austria, federal, provincial and municipal governments share the responsibility for education. In general, higher education is a federal matter; the provinces, and in some cases municipalities, play a supplementary role in the other education levels. Therefore, the Federal Ministry of Education, Science and Research (*Bundesministerium für Bildung, Wissenschaft und Forschung*, BMBWF) is the key policy actor for what concerns higher education policy.

Regarding the promotion of knowledge transfer the BMBWF in co-operation with the Federal Ministry for Digital and Economic Affairs (*Bundesministerium für Digitalisierung und Wirtschaftsstandort*, BMDW) and the Austrian Ministry for Transport, Innovation and

Technology (*Bundesministerium für Verkehr, Innovation und Technologie*, BMVIT) has set up the NCP-IP, the National Contact Point for Knowledge Transfer and Intellectual Property (*Nationale Kontaktstelle für Wissenstransfer und Geistiges Eigentum*, www.ncp-ip.at), which provides additional support to universities, research institutions and companies, as proposed by the European Commission's intellectual property (IP) recommendation. For instance, the Intellectual Property Agreement Guide (IPAG) project offers standard sample contracts free of charge on line (www.ipag.at). Furthermore, the BMBWF funds programmes such as Knowledge Transfer Centres and Spin-off Fellowships (see below).

Other federal ministries provide an important contribution to higher education policy. For example, the BMVIT is responsible for applied research and technology development. The BMVIT promotes partnerships with the private sector and encourages companies to invest more in research and technology and co-operate with research institutions through a wide range of funding programmes, mainly administered by the Austrian Research Promotion Agency.

Another important policy actor is the BMDW, which promotes investment in applied research, development and innovation. The BMDW finances programmes, initiatives and networks to strengthen innovative Austrian companies and start-ups and to enhance industry-science linkages and knowledge transfer between academia and the business sector. Important federal actors such as the Austrian Research Promotion Agency (FFG), the Austria *Wirtschaftsservice Gesellschaft mbH* (AWS) and the Christian Doppler Research Association (CDG) administer funding programmes on behalf of the BMDW.

The rectors' conference

Each sector of the Austrian higher education system has its own rectors' conference. University Austria (*Österreichische Universitätenkonferenz*) is the rectors' conference for public universities. The Association of Universities of Applied Sciences (*Österreichische Fachhochschul-Konferenz*) represents all Austrian UAS. The Rectors' Conference of Austrian University Colleges of Teacher Education (*Rektorinnen- und Rektorenkonferenz der österreichischen Pädagogischen Hochschulen*) is the rectors' conference for university colleges for teacher education. Finally, the Conference of Austrian Private Universities (*Österreichische Privatuniversitäten Konferenz*) represents private institutions.

Austrian Higher Education Conference

The Austrian Higher Education Conference plays an important role in a coherent policy. In the period 2015-17, this body issued two recommendations for the further development of Austrian higher education: in June 2015, the Recommendation of the University Conference for Further Development of Doctoral Training in Austria and in December 2015, the Recommendations to Promote Non-traditional Approaches in the Higher Education Sector. The latter represents an important step towards social participation and permeability among the different sectors of higher education.

Student union

The Austrian National Union of Students (*Österreichische HochschülerInnenschaft*) is the legal representative of all students in higher education. It has separate entities for each sector.

Austrian quality assurance agency

The Agency for Quality Assurance and Accreditation Austria (AQ Austria) was established in 2012 by the Act on Quality Assurance in Higher Education (HS-QSG). AQ Austria is responsible for the entire higher education sector in Austria, with the exception of university colleges for teacher education. In carrying out its responsibilities, AQ Austria follows some basic principles:

- HEIs are responsible for the quality of their activities and for quality assurance and improvement.
- AQ Austria understands its procedures as complementary to HEIs' internal evaluation procedures.
- Quality assurance procedures follow international good practices, especially standards and guidelines for quality assurance in the European higher education sector.
- Co-operation with HEIs and other stakeholders is needed to develop standards and evaluation criteria.

Research funding agencies/research institutions with their own funding programmes

The Science Fund (FWF)

The FWF is Austria's central institution for funding basic research. The purpose of the FWF is to support the ongoing development of Austrian science and basic research at a high international level. The FWF aims to strengthen Austria's international performance and capabilities in science and research. The FWF is also actively promoting the attractiveness of Austria as a location for high-level scientific activities. To achieve this result, the Science Fund supports top-quality research projects for individuals and teams and promotes Austria's innovation system and research facilities.

Funding applications to the FWF totalled EUR 948.7 million in 2018, a year-to-year absolute increase of EUR 69.3 million (7.3%) compared to 2017. Accordingly, new funding approvals amounted to EUR 230.8 million, an increase of EUR 13.5 million (5.8%). By applying for the competitive funds provided by the FWF, Austrian science entities have also become quite competitive at the international level. For example, six out of seven 2017 ERC Advanced Grant recipients have a successful FWF track record. The FWF also finances individual researchers with different programmes, including the Schrödinger Fellowships, the doc.funds programme and Young Independent Researcher Groups. Recognising the importance of the Science Fund, the federal government will progressively raise its budget by EUR 110 million between 2018 to 2022.

Austrian Research Promotion Agency (FFG)

The Austrian Research Promotion Agency is the national funding agency for industrial research and development. Therefore, the FFG manages and finances research projects in the business and science sectors, promotes co-operation between science and industry, manages co-operative programmes and projects with the European Union and other European and international partners, and represents Austria's interests at relevant European and international institutions. In addition, the FFG promotes Austria's involvement in European programmes, especially in the EU Framework Programme for Research,

Technology and Innovation and the Framework Programme for Competitiveness and Innovation.

Every year, the FFG awards over EUR 400 million in federal funding to approximately 3 000 applied research and innovation projects, involving more than 5 500 stakeholders. As national contact point for the EU programme Horizon 2020, the FFG provides national organisations with EUR 150 to 200 million in funding every year. The agency also provides professional expertise on tax incentives for research and innovation (“research premium”).

Austria Wirtschaftsservice Gesellschaft mbH (AWS)

Established in 2002, the Austria *Wirtschaftsservice Gesellschaft mbH* awards funding and provides financing and consulting services. Grants and funding provided by the AWS are in line with the Guarantees Act and the SME Subsidies Act, fostering innovation and innovation consulting for the benefit of the Austrian economy.

The AWS is particularly active with start-ups. It provides these agents with non-pecuniary support programmes, such as the i2 Business Angels programme, or funds at market conditions that private investors can use for co-financing. The latter includes initiatives such as the AWS Business Angel Fund, the AWS Founder Fund and the AWS *Mittelstandsfonds*. In addition, the Double Equity programme leverages start-up equity.

The AWS provides financial support to about 22% of real assets investments in Austria. Every year, the AWS finances approximately 200 knowledge and research-based start-ups and supports over 600 companies and universities with the aim to improve their intellectual property rights (IPR) strategy.

Austrian Academy of Sciences (OeAW)

The Austrian Academy of Sciences is Austria’s main non-academic research and science institution. OeAW was founded in 1847 and its statutory mission is to “promote science in every way”. Today the OeAW has over 770 members and 1 600 employees dedicated to basic research, interdisciplinary exchange of knowledge and the dissemination of new insights with the aim of contributing to progress in science and society.

The OeAW manages 28 research institutes in the field of basic research in the arts and humanities and the social and natural sciences. Among these institutes, the most prominent are the following: the Research Center for Molecular Medicine (CeMM), the Institute of Molecular Biotechnology Pioneering (IMBA) and the Gregor Mendel Institute of Molecular Plant Biology (GMI).

Ludwig Boltzmann Gesellschaft (LBG)

The Ludwig Boltzmann Gesellschaft is a public research institution with a thematic focus on medicine, life sciences and humanities, social sciences and cultural studies. Currently, there are 18 Ludwig Boltzmann Institutes, which also focus on the development and testing of new collaboration models between science and non-scientific actors such as companies, the public sector and civil society. For this purpose, LBG created the Lab for Open Innovation in Science in 2016.

The Christian Doppler Research Association (CDG)

The Christian Doppler Research Association promotes co-operation between science and industry. The CDG supports temporary research units implementing application-oriented

basic research. The CDG follows two funding models: the Christian Doppler Laboratories, which support universities and non-university research institutions, and the Josef Ressel Centres, which support universities of applied sciences.

Under the leadership of highly qualified scientists, research groups work closely with business partners on innovative answers to corporate research questions. Over the years, more than 200 CD Laboratories have been funded by the CDG.

Advisory bodies

The Austrian Science Board, the Austrian Council for Research and Technology Development, and the ERA Council Forum Austria are three advisory bodies supporting the federal government in the fields of science and innovation policy. The Austrian Science Board advises the Federal Ministry of Education, Science and Research, universities, and federal and provincial parliaments in matters related to higher education and science policies. The Austrian Council for Research and Technology Development advises the federal government in research, technology and innovation policies with the aim to provide an essential contribution to a future-oriented research, technology and innovation (RTI) policy. The third body, the ERA Council Forum Austria, advises the Austrian ministers responsible for science and research and focuses especially on the connections between European research policy and the national innovation system.

Social partnership and representatives of interests

The “Economic and Social Partnership” is a system of co-operation between the government and the Federal Chamber of Labour, the Austrian Chamber of Agriculture, the Austrian Trade Union Federation, and the Austrian Federal Economic Chamber. This system is not a legal requirement; it is an informal body based on the common will of the participants to promote co-operation. In addition, the Federation of Austrian Industries is the voluntary and independent representation of interests of the Austrian industry. In particular, the Federation of Austrian Industries and the Austrian Economic Chambers have initiated numerous activities, to enhance entrepreneurial learning and teaching as well as industry-science partnerships.

Austrian Patent Office

As legal issues related to IP and the regulation of exploitation rights are important factors for academic spin-offs and start-ups, the Austrian Patent Office represents a central actor in the federal innovation system. Recently, the Patent Office has started to provide a range of new services for start-ups, such as the “patent voucher”, “the provisional patent application” (PRI) and the fast online brand registration called “Fast Track”.

The social dimension of higher education

The Austrian Higher Education system has been increasingly focusing on the social dimension. In particular, equity in access and the success of previously under-represented groups have gained particular importance in recent years.

National guidelines for equal opportunities and anti-discrimination

The gender performance agreements between universities and the federal ministry prioritise equality and the compatibility of studies with work or care obligations. The University Act of 2002 (BMBWK, 2002) introduced specific institutions – a working group for equality

issues and an arbitration committee – for the reduction of inequalities. For instance, the regulation asks public universities to respect gender parity in university bodies. The University Act also outlined organisational framework conditions for the continuation of equity policies, such as co-ordination centres for gender research. Finally, the University Act spurs universities to adopt their own women’s promotion and equality plan.

UAS, which had been created as private companies, underlie a more complex legal regulation. They have to address the demands of the UAS studies act, namely to define measures in the statutes for equality between women and men, and provisions on the promotion of women. Due to their legal form, UAS have to fulfil the demands of the so-called “Equal Treatment Act” (*Gleichbehandlungsgesetz*); accordingly, UAS also report on the proof of fair remuneration for men and women.

National Strategy on the Social Dimension in Higher Education

To mainstream the social dimension in higher education, the federal ministry developed the National Strategy for the Social Dimension in Higher Education in 2016. The social dimension is now referenced in ministerial strategic documents and in university development plans. The process underpinning the creation of this national strategy involved universities, social partners and other key actors in Austrian higher education.

In particular, the strategy, which will be evaluated in 2025, has three main objectives:

- Objective I – promoting integrative access: improve the quality and accessibility of information and counselling services for students. Put in place outreach activities to democratise access to higher education. This includes the recognition and validation of non-formal and informal competencies.
- Objective II – preventing student dropout and improving student success rates. This objective aims above all to make programmes more flexible so that they can be compatible with the other activities students are involved with, including working and parenting. HEIs should develop a “welcoming culture” and enhance the quality of teaching to make it more inclusive and sensible to diversity.
- Objective III – optimising framework conditions and improving the capacity to measure the progress of higher education policy to be more inclusive.

To support the implementation of the strategy by all Austrian public universities, the federal ministry has allocated 0.5% (a total of about EUR 45 millions) of the overall budget to ensure the adoption of measures connected to the social dimension in the performance agreements of all public universities. The allocation of the retained funds will follow a report from the universities by 2020.

The entrepreneurial and innovation agenda in higher education

Austrian federal authorities have put in place several measures to foster the entrepreneurial spirit at public universities. All stakeholders in Austria consider HEIs important players and public authorities have put in place various policies to help connect knowledge generated at universities with entrepreneurial innovation processes (see BMBWF/BMVIT/BMDW, 2019). In particular, federal authorities have put in place a series of policy measures to:

- Integrate the entrepreneurial agenda in the institutional strategy and development plan, also using the HEInnovate tool.

- Increase entrepreneurial competencies and embedding entrepreneurship education in curricula.

The federal ministry has explicitly asked public universities to address and take up the entrepreneurial agenda in their performance agreements. This approach proved to be successful; the performance agreements for 2019-21 focus on entrepreneurship as a strategic issue. Several public universities have created initiatives in the field of teaching and learning or provide support to entrepreneurship through their infrastructure. Knowledge transfer centres are often in charge of activities related to entrepreneurship education.¹⁰ Public universities promote interdisciplinary competencies and/or transferable skills for students and for faculty and staff. Several examples in the fields of entrepreneurship education and support to entrepreneurs are discussed in Chapters 4 and 5 respectively.

Within this context, UAS represent a specific feature of the Austrian “entrepreneurship and innovation agenda”. UAS are integrated into their own regional ecosystems and are in a good position to implement the entrepreneurial agenda. Several UAS have embedded entrepreneurship in their programmes. There are several examples of UAS acting as hubs of regional or national networks promoting the co-operation between HEIs and businesses and, more generally, producing value for the economy and society.

Strategic orientation and organisational capacity

Main guiding frameworks and strategies

Three major government programmes frame HEIs’ individual strategies, regarding innovation and the entrepreneurial agenda:

- The federal 2011 RTI strategy.
- The Austrian University Development Plan, which focuses on public universities in the years 2019-24.
- The development and funding plans of UAS, the most recent covering the period from 2018/19-2022/23.

Concerning the UAS sector, the general strategic outlines are defined by the ministry in collaboration with the Association of Austrian Universities of Applied Sciences.¹¹ In October 2017, the association presented a plan promoting the entrepreneurial and innovation agenda at UAS.¹²

Regarding public universities, the GUEP has identified eight systemic goals. One of these, Goal no. 6 focuses on the “expansion of knowledge- and innovation-transfer and locational advantages” and directly addresses the entrepreneurial and innovation agenda. It encompasses some sub-sections and explicitly mentions the “intensification of knowledge and technology transfer as well as the entrepreneurial spirit” and “regional development”.¹³

The auxiliary documents for the performance agreements 2019-21 refer to specific measures to develop entrepreneurial spirit at public universities. For example, the agreements refer to the integration of the entrepreneurial agenda in the institutional strategy using the HEInnovate tool, increasing entrepreneurial competencies and embedding entrepreneurship education in curricula.

The 2015 Action Plan for a Competitive Research Area represents another guiding framework for public universities. The action plan drawn up by the former Federal Ministry

of Science, Research and Economy contains measures to promote the co-operation between science and industry; among them, new IPR and strategies to generate value from higher education, the improvement of research infrastructure and “strengthening entrepreneurship and establishing it as a guiding principle for universities”.

Austria also implements the smart specialisation strategy. In co-operation with regional policymakers and the private sector, HEIs should act as partners to promote a regional smart specialisation strategy. In 2013, the federal government introduced a new section to the tri-annual performance agreements: the “Lead institutions initiative – Connecting universities with and in their regions”. The initiative has encouraged science and research institutions to fulfil their role as regional lead institutions to create societal and economic value. The rationale of the lead institutions initiative is the empowerment of HEIs as sources of strategic capacity, international co-operation hubs and institutions able to create synergies among regional actors (thematic-/location-related approaches).

Governmental strategies on digitalisation

Austria is leveraging on HEIs to promote digital technologies. This is done directly through the General University Development Plan (GUEP), which outlines specific measures for HE with regard to digitalisation, and indirectly through the Digital Roadmap Austria in which HEIs have an indirect role in connection with the RTI strategy, IP strategy and Open Innovation strategy (Box 1.1).

Box 1.1. Open Innovation strategy in Austria

An aspect of digitalisation that plays a comparatively prominent role/position in Austria is the issue of open access, open data and open science. In July 2016, the federal government – as the first member state of the European Union – issued its own Open Innovation strategy. The aim of this strategy is to open up, expand and further develop the innovation system with the purpose of boosting its efficiency and output orientation, and improving the digital literacy of innovation actors.

Source: BMFW/BMVT (2016b), *Open Innovation Strategie für Österreich*, <http://openinnovation.gv.at/wp-content/uploads/2016/08/Open-Innovation-barrierefrei.pdf>.

The issue of “digitalisation” appears in several “system goals”. For instance, Austrian authorities intend to reduce teacher-student ratios through “the use of digital possibilities in managing larger groups of students”. The digital transformation is also mentioned in the system goal focusing on the “social responsibility of universities”. Envisaged measures include, among others, the broadly formulated aim to “develop institutional strategies to be more innovative and transformative with regard to digitalisation as an organisation”. As a more concrete example, the strategy names the inclusion of competencies in “computational thinking” into curricula, especially in basic study modules in the humanities and social sciences. The GUEP translates the Open Innovation strategy and the other system goals for universities. The GUEP considers digitalisation as a means to ensure equity in the access to higher education by providing open educational resources or flexible digital learning environments benefitting disadvantaged or non-traditional students.

Programmes fostering knowledge exchange

In Austria, there are a large number of institutions and instruments, with very different scope and funding, supporting innovation and knowledge exchange (Table 1.2). The country has been pioneering policy initiatives to bring HEIs and businesses closer together since the 1980s. Some of these programmes are described in detail below.

Table 1.2. Main policy programmes directed to foster knowledge exchange in Austria (by year of inception)

Research co-operations between HEIs and the business sector	Academic entrepreneurship and academic start-ups	Engagement activities in general (civil society, non-governmental organisations...)
Christian Doppler Laboratories (1988-95) Josef Ressel Centres (2012) https://www.cdga.ac.at/en/	AWS Seedfinancing (1989) https://www.aws.at/foerderungen/seedfinancing	Staatspreis Innovation (1979) www.staatspreis.at
COMET (1998) https://www.ffg.at/en/comet-competence-centers-excellent-technologies	AWS i2 Business Angels (1997) https://i2.aws.at/	Jugend Innovativ (1987/88) www.jugendinnovativ.at
Research Studios Austria (2003) https://www.researchstudio.at/en	AplusB Centres (2002) https://www.ffg.at/en/apusb-academia-plus-business	University for Kids and Young Adults (2001) https://kinderuni.at/
BRIDGE (2005) https://www.ffg.at/en/bridge	Phönix (Prize for innovative academic start-ups) (2012-19) https://www.aws.at/foerderungen/phoenix/	Long Night of Research (<i>Lange Nacht der Forschung</i>) (2005) https://www.langenachtderforschung.at/2018/
Innovation Voucher (2007) https://www.ffg.at/en/innovation-voucher	AWS First (2014) https://www.aws.at/foerderungen/aws-first/	Sparkling Science (2007) https://www.sparklingscience.at/
Laura Bassi Centres of Expertise (2009) https://www.ffg.at/en/laura-bassi-centres-expertise	JumpStart (2015) https://www.aws.at/foerderungen/aws-jumpstart	Red White Red Card for Students and Graduates (2011) https://www.migration.gv.at/en/types-of-immigration/permanent-immigration-red-white-red-card.html
R&D Competences for Industry (2011) https://www.ffg.at/en/rd-competences-industry	AWS AplusB Scale-up (2016) https://www.aws.at/foerderungen/aws-apusb-scale-up/	Responsible Science and Citizen Science (2015) https://www.responsible-science.at/
Knowledge Transfer Centres (2014) http://www.wtz.ac.at/wissenstransferzentrum-english/	Spin-off Fellowships (2017) https://www.ffg.at/spin-off-fellowships-programm	Science Slam (2016) http://www.scienceslam.at/
		National strategy on the social dimension (2017) https://bmbwf.gv.at/english/home/studies

Source: Ecker, *et al.*, 2017.

CDG – Christian Doppler Research Association

The CDG was founded 1988 as a group instrument of state-owned industries (*Österreichische Industrieholding AG*, *ÖIAG*) with the major goal of establishing research units (CD Laboratories) to pursue basic research at a high level. The restructuring of the *ÖIAG* from an industrial group to an investment and privatisation agency in 1993 also brought about a reform of the CDG, opening the association to all Austrian companies in demand for high-level- and application-oriented basic research. In 1995, the CDG was placed under the responsibility of the Federal Ministry of Economic Affairs (now Federal Ministry of Digital and Economic Affairs) and given a new financing basis in the form of

a public-private partnership (PPP) model for research co-operation between science and industry.

Today, the CD Laboratories have an annual budget that ranges between EUR 110 000 and EUR 700 000. Financing takes place through the Federal Ministry for Digital and Economic Affairs, the National Foundation for Research, Technology and Development as public sponsors and by the companies as co-operation partners. In 2017, 148 foreign and domestic enterprises co-operated with Austrian HEIs in 76 CD Laboratories. In 2018, the number of CD Laboratories increased to 85.

In 2012, the CDG acquired an additional area of activity with the management of the Josef Ressel (JR) Centre programme at universities of applied sciences. JR Centres have a budget ranging from EUR 80 000 to EUR 400 000 per year. At the end of 2018, 12 JR Centres were affiliated with universities of applied sciences.

COMET – Competence Centres for Excellent Technologies

Since 1998, 45 competency centres (K_{plus}, K_{ind}, and K_{net} competency centres) were established in Austria, aiming to build up structures for co-operative research. In 2006, the programme was relaunched as the COMET Competence Centre Programme and took over the existing portfolio of centres and networks at the federal level. Their aim was to generate research competencies through co-operation between science and industry and provide a network of hubs offering high-quality research. The Federal Ministry for Transport, Innovation and Technology and the Federal Ministry for Digital and Economic Affairs finance COMET; in addition, the Austrian federal regions provide funding.

The COMET Programme has been implemented in three actions:

1. K2 Centres aim at existing competencies and developing new competencies by collaborating with internationally renowned researchers, scientific partners and companies in a joint strategically oriented research programme at the highest level. K2 Centres are characterised by extremely ambitious research programmes.
2. K1 Centres aim to develop competencies through excellent co-operative research with a medium- to long-term perspective. They conduct research at top international level and stimulate new research ideas in their fields.
3. COMET projects aim to carry out high-quality research in science-industry collaboration. They are characterised by a medium-term perspective and clearly defined topics having the potential for further development.

To improve the capacity to pursue valuable R&D activities at the interface between science and industry, the COMET programme has benefitted from some strategic, conceptual improvements. Recently, programme lines K1 and K2 discussed above were merged and a new programme line, the COMET Module, was introduced. The objective of the COMET Module is to establish promising and emerging fields of research and build up new fields of expertise. Therefore, COMET Modules are characterised by high-risk research activities.

R&D Competences for Industry

The R&D Competences for Industry programme, which was launched in 2011, aims to strengthen the R&D competency of the Austrian industry. This initiative of the Federal Ministry for Digital and Economic Affairs supports company measures for the systematic development and qualification of their research and innovation staff. The programme also promotes the co-operation between companies and HEIs/research institutions. In addition,

R&D Competences for Industry enhances the integration of different research fields that are relevant for industry. The programme focuses particularly on small- and medium-sized enterprises (SMEs) located in Austria.

Knowledge transfer centres

The establishment of three regional knowledge transfer centres (KTCs) and of a thematic knowledge transfer centre in the life sciences field (www.wings4innovation.at) represents the contribution of Austrian universities to intensifying the knowledge transfer from science to business and society, funded by the Federal Ministry for Digital and Economic Affairs and the Federal Ministry of Education, Science and Research.

The regional knowledge transfer centres aim to optimise and extend the management of IP by means of inter-university and multi-centre co-operation projects. Networking should provide business and industry with information, which could improve and accelerate access to innovation, technologies, expertise and knowledge assets. In particular, one of the main targets of KTCs is to simplify searching for university-based co-operation partners and accelerate the launching of research projects. KTCs also aim to transfer knowledge beyond the commercial goal. Accordingly, they pay particular attention to knowledge transfer activities in the area of humanities, social and cultural sciences, and arts. The centres are organised as joint university projects.

In recent years, performance agreements have also been an important instrument to strengthen knowledge and technology transfer. Universities have established and institutionalised strategic knowledge and technology transfer by implementing their IPR and exploitation strategies. In this context, technology transfer offices at universities play an important role.

In the current performance agreements, technology transfer offices are also connected with the framework of knowledge transfer centres. Therefore, the new Impuls Programme for Austrian Knowledge and Technology Transfer offers further incentives to expand the networks of universities and intensify co-operation with schools, universities of applied sciences, kindergartens and companies, especially in the field of STEM. It also provides additional funding for patents and prototypes. Funds of up to EUR 6 million have been awarded to the programme (www.aws.at/wissenstransferzentren, www.aws.at/patentfoerderung, www.aws.at/prototypenfoerderung).

AplusB Centres

The AplusB (Academia plus Business) impulse programme aims to generate a sustainable increase in the number of innovative, technology-oriented spin-offs and start-ups from the academic sector. The programme is based on the evidence that spin-off and start-up activity in Austria is not very dynamic by international standards. This is particularly true for the high-tech sector, which accounts for less than 10% of all new companies. The fact that the number of new companies founded by university graduates and scientists is small is significant.

The programme funds the AplusB Centres that are providing professional support for scientists in the difficult process of turning an idea into a viable business. This involves counselling and assistance during the actual start-up phase and the proof of concept: establishing the idea of entrepreneurship more firmly in academic theory and practice.

The AplusB Centres aim to support different activities and actors:

1. For incubation: scientists from universities, universities of applied sciences, colleges and non-university research institutions, as well as R&D academics from the private sector.
2. For awareness-raising and stimulation activities: young scientists, students and professors.

There are currently seven AplusB Centres in Austria. In previous years, the FFG was responsible for the programme management; since 2017 the AWS has taken over the programme management under the new name “AplusB Scale-up”.

Sparkling Science

Sparkling Science is a research programme of the Federal Ministry of Education, Science and Research. The programme started in 2007 and the last projects approved will run until the end of 2019. The initiative’s vision has been to break down structural barriers between the education and academic system in Austria. For this purpose, the programme has been facilitating a working environment in which scientists have the possibility to work side by side with young people involved in scientific research projects. Within this context, young colleagues can take an active part and work independently on parts of the research projects. In addition, as junior colleagues, they can introduce important suggestions into the research approach. As of June 2018, the programme has funded almost 300 projects.

The Innovation Foundation for Education

The aim of the Innovation Foundation for Education is to explore new paths in education and to support projects that promote transformation processes in educational institutions (<https://innovationsstiftung-bildung.at/>). The foundation was established in 2017 and it is endowed with a minimum of EUR 2 million per year. It aims to bring together new players and, in order to do so, supports educational institutions, companies and non-governmental organisations.

Notes

¹ Among the 22 public universities, there are 15 research universities, 6 universities of the arts and 1 university for continuing education. The former medical faculties of the Universities of Vienna, Graz and Innsbruck became “Special” medical universities in 2004. In 2014, a medical faculty was established at the University of Linz.

² The procedure for the recognition of private universities is outlined in the Private Universities Act (*Privatuniversitätengesetz*, PUG) of 2011 and in the Act on Quality Assurance in Higher Education (*Hochschul-Qualitätssicherungsgesetz*, HS-QSG) of the same year.

³ Introducing the UAS Studies Act meant introducing a new kind of relationship between state and HEIs in Austria. For the first time, HEIs became autonomous institution, decentralising decision-making processes to foster independence, responsibility and flexibility of HEIs. As a counterbalance, obligatory procedures of external quality assurance (accreditation, audit) conducted by an independent accreditation agency were established.

⁴ The UAS Studies Act makes no regulation on the legal status of UAS providers. Although most of them are limited companies, there are other legal entities as well, e.g. associations, private foundations, etc.

⁵ As mentioned above, since 2012, AQ Austria is responsible for the accreditation of study programmes and of newly established UAS institutions.

⁶ Austrian authorities were trying to limit the influx of German students, who do not fulfil the admission requirements in Germany, enrolling at Austrian universities.

⁷ To develop the UAS sector and generate new study places in existing or new programmes, the ministry opens a tender process for providers.

⁸ See also https://uniko.ac.at/modules/download.php?key=10897_DE_O&cs=3D3C.

⁹ Before 2002, public universities were state agencies and academics with a permanent position had the status of civil servants.

¹⁰ See <http://www.wtz.ac.at/wissenstransferzentrum-english/>.

¹¹ The Association of Austrian Universities of Applied Sciences is a private institution representing the interests of its members but has no legal foundation.

¹² See www.fhk.ac.at/index.php?id=111&L=0.

¹³ Other system goals are also to be mentioned, such as Goal no. 7, “Increase of internationalisation and transnational mobility”, as well as Goal no. 8 “Social responsibility of universities: gender equality, diversity and social inclusion, responsible science, sustainability and digital transformation”.

References

BMFWF/BMVIT (2016b), Open Innovation Strategie für Österreich, <http://openinnovation.gv.at/wp-content/uploads/2016/08/Open-Innovation-barrierefrei.pdf>.

BMBWF/BMVIT/BMDW (2019), *Austrian Research and Technology Report 2019*, Vienna.

BMBWK (2002), “University Organisation and Studies Act (Universities Act 2002), University Organisation Amendment Act and Universities of the Arts Organisation Amendment Act” No. 120/2002 9th August 2002 https://www.uibk.ac.at/index/finanzabteilung/ug2002_englisch.pdf

Ecker, B., C. Reiner and G. Gogola (2019), “Case study on the policy mix for science-industry knowledge transfer in Austria: Contribution to the OECD TIP Knowledge Transfer and Policies project, on behalf of the BMDW”, Vienna.

Ecker, B, et al. (2017), “HEInnovate in Austria: Background report”, mimeo.

European Commission (2011), “Principles for Innovative Doctoral Training”, Directorate B – European Research Areas, Unit B.2 “Skills”
https://euraxess.ec.europa.eu/sites/default/files/policy_library/principles_for_innovative_doctoral_training.pdf.

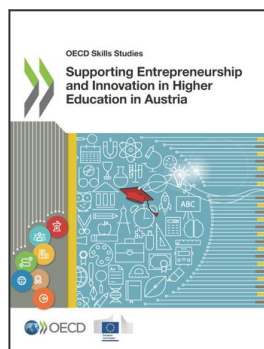
Kasparovsky, H. and I. Wadsack-Köchl (2015), *Higher Education in Austria, 5th Edition*, Federal Ministry of Science, Vienna.

OECD (2018a), *Education at a Glance 2018: OECD Indicators*, OECD Publishing, Paris, <https://doi.org/10.1787/eag-2018-en>.

OECD (2018b), *OECD Reviews of Innovation Policy: Austria 2018*, OECD Reviews of Innovation Policy, OECD Publishing, Paris, <https://doi.org/10.1787/9789264309470-en>.

Pechar, H., G. Ates and L. Andres (2012), The “new doctorate” in Austria: Progress toward a professional model or status quo?”, *Center for Educational Policy Studies Journal*, Vol. 2(4), pp. 91-110.

Pechar, H. and E. Park (2017), “Higher education systems and institutions: Austria”, in S. Jung-Cheol and P. Teixeira (eds.), *Encyclopedia of International Higher Education Systems and Institutions*, Springer.



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