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Researchers' Report 2014

Country Profile: Estonia



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1. Key data

National R&D intensity target

“Estonia had an R&D intensity of 2.37% in 2011¹, with a steep increase from 1.62% in 2010. The increase is significantly due to the private R&D sector expenditures, which doubled in 2011 compared to 2010 in absolute numbers. In relative terms, the business expenditures for R&D as percentage of GDP represent 1.50% in 2011², from 0.81% in 2010, with a remarkable *overall annual growth rate of 24.4% between 2000 and 2011*. Public expenditures on R&D reached a share of 0.87% of GDP in 2011. With an ambitious 3% R&D intensity target for 2020 (with a 2% milestone in 2015), Estonia takes a decisive commitment for achieving a key feature for an ambitious growth path towards a knowledge-based society.

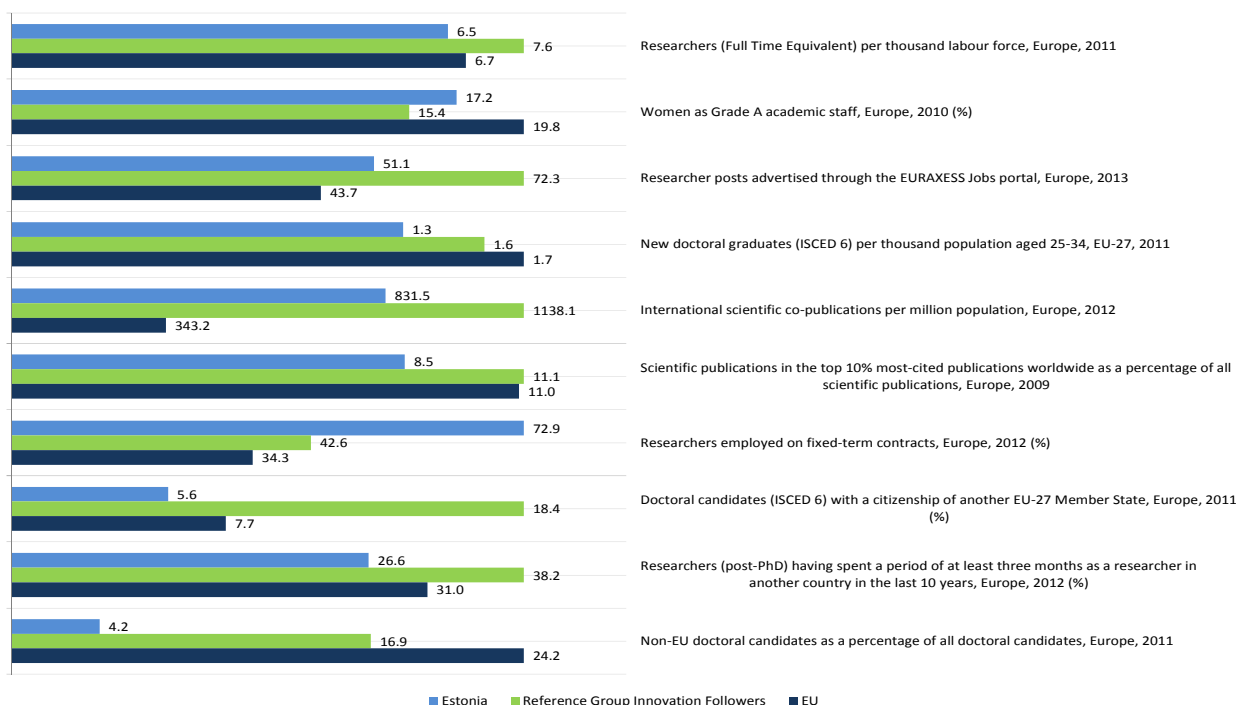
The Estonia 2011 strategy foresaw a major boost in 2011 provided by front-loaded EU structural funds estimated at up to 1.2% of GDP. Currently 24.7% of the total Structural Funds available to Estonia is allocated to research, innovation and entrepreneurship, which is very close to the overall 25% average at EU level. The current rate of absorption of the funds dedicated to R&I and entrepreneurship is 57.1%. Notwithstanding the high level of public funding of R&D, reaching the 2020 R&D intensity target will depend both on the ability to attract R&D intensive foreign direct investment and a further significant growth in business R&D. Business R&D expenditure as a percentage of GDP has already increased from 0.14% in 2000 to 0.63% in 2009 to 0.81% in 2010. The expected leverage effect of the front-loaded EU structural funds for business R&D will be closely monitored.

The total number of Estonian participants in the 7th Framework Programme is so far 342 (out of 1 567 applicants). They have in total received EUR 552 million. The rate of participant success is 21.83%, which is slightly below the EU average rate of success of 21.95%.³

Key indicators measuring the country’s research performance

The figure below presents key indicators measuring Estonia’s performance on aspects of an open labour market for researchers against a reference group and the EU average⁴.

Figure 1: Key indicators – Estonia



¹ In 2012, R&D expenditure was 2.18% (Eurostat, 2014).

² In 2012, business R&D expenditure: 1,25% (Eurostat, 2014).

³ European Commission (2013), “Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013”

⁴ The values refer to 2013 or the latest year available

Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2014, MORE2. Notes: Based on their average innovation performance across 25 indicators, Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK show a performance above or close to that of the EU average. These countries are the "Innovation followers"⁵.

Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator	Estonia	EU Average/Total
Head Count per 1 000 active labour force (2011)	10.99	10.55
Head Count (2011)	7 646	2 545 346
FTE per 1 000 active labour force (2011)	6.48	6.75
Full time equivalent (FTE) (2011)	4 511	1 628 127

Source: Deloitte

Data: Eurostat

2. National strategies

The Estonian Government has adopted a package of measures aimed at training enough researchers to meet its R&D targets and at promoting attractive employment conditions in public research institutions. The table below presents key programmes and initiatives intended to implement the strategic objectives to train enough researchers to reach Estonia's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies

Measure	Description
Estonian Research and Development and Innovation Strategy 2014-2020 "Knowledge-Based Estonia"	<p>This strategy was prepared in parallel and in coordination with the new entrepreneurship strategy (see below) with the goal of creating a continuum of public support measures for research, innovation and business development within the broader context of the Strategic Framework for Smart Specialisation⁶, which has identified information and communication technology (ICT) across all sectors, health technologies and services, and more effective use of resources as the target growth areas. This Framework serves to steer part of the investment from both the RD&I and Entrepreneurship strategies into growth areas of high economic potential. These strategies are also the basis for using the EU Structural Funds in research, innovation and business support in the period 2014-2020.</p> <p>The overall aim of the development of RDI is to create favourable conditions for an increase in productivity and in the standard of living, for good-quality education and culture, and for the longevity and development of Estonia. It is important to achieve a balanced, harmonious and sustainable RDI system, where resources must be utilised for the benefit of society and for the development of new products and services.</p> <p>The main task of the new strategy is to increase the impact of the research system in Estonia in solving the challenges facing society as well as improving the competitiveness of the economy. The 2020 targets for the indicators are:</p> <ul style="list-style-type: none"> – investment in research and development: 3% of GDP, incl. private sector R&D expenditures of 2% of GDP (2011: 2.41% and 1.52% of GDP, respectively); – 10th position (minimum) in the EU Innovation Union Scoreboard (2011: 14th position); and – enterprise productivity per person employed: 80% of the EU average (2011: 68%).

⁵ European Commission (2014), "Innovation Union Scoreboard 2014"

⁶ For more information, go to: <http://www.arengufond.ee/en/nutikas-spetsialiseerumine/tutvustus/> and http://www.arengufond.ee/wp-content/uploads/2013/04/Estonia_Smart_Specialisation_Qualitative_Analysis.pdf

Measure	Description
	<p>Objectives</p> <p>1. Research in Estonia is of a high level and diverse. It is internationally competitive and visible, and covers the main fields of higher education and culture. The network of research institutions operates efficiently. The infrastructure is modern. A new generation of researchers and innovators is ensured. Estonia is an attractive place for research and development, and a researcher career is popular. Target level of indicators for 2020:</p> <ul style="list-style-type: none"> – 11% of all top-level research publications in Estonia are among the top 10% most cited research publications worldwide (2008: 7.5%); – number of new doctorate graduates in an academic year: 300 (2012: 190); – number of top-level articles per million population: 1600 (2012: 1191). <p>2. Research and development (R&D) functions in the interests of the Estonian society and economy. It proceeds from the needs of society and the economy, and prioritises research applications. Research institutions are motivated to undertake applied research and for productive cooperation with enterprises and government authorities. The state is smart in commissioning applied research and development. The organisation of research carried out for socio-economic objectives is efficient. Target level of indicators for 2020:</p> <ul style="list-style-type: none"> – proportion of expenditure on socio-economic applications (except academic studies) from RD appropriations in the state budget: 40% (2011: 30%); – private sector RD funding of public sector RD forms 7% of total public sector RD expenditures (2011: 3.1%). <p>3. R&D makes the structure of the economy more knowledge-intensive. RDI investments selected and managed by the smart specialisation method encourage the development of growth fields at a faster than expected pace. The share of knowledge-intensive entrepreneurship in the economy and the added value of exports will increase significantly. Target level of indicators for 2020:</p> <ul style="list-style-type: none"> – share of employment in high and medium-high-technology sectors in total employment: 9% (2010: 6%); – share of high-technology products and services in exports: 15% (2010: 10.4%). <p>4. Estonia is active and visible in international RDI cooperation. Cross-border cooperation helps solve the tasks facing Estonia and the world as a whole. Estonia participates as a partner in the initiatives of the European Research Area, (including in the joint programming of research), European innovation partnerships, initiatives by the Baltic and Nordic common area, and international research infrastructures. Enterprises have access to the world's newest RDI results, and cooperation opportunities and infrastructures are open to them. Target level of indicators for 2020:</p> <ul style="list-style-type: none"> – The success of Estonia is reflected in the volume of contracts, per capita, won through the European Union research and innovation framework programme "Horizon 2020": 100% of the EU average (2011: 87% of the EU average); and – The share of internationally coordinated research in the state-financed R&D 3% (2010: 1.31%).
<p>Estonian Entrepreneurship Growth Strategy 2014–2020</p>	<p>The general goal of the Estonian Entrepreneurship Growth Strategy 2014–2020, the successor to the Estonian Enterprise Policy 2007-2013, is to facilitate the achievement of the umbrella objectives of the "Estonia 2020" competitiveness plan (see below) of enhancing productivity and employment, and thus increasing entrepreneurs' income by moving to higher added value products and services. The Strategy has been developed within a new holistic approach to strategic planning of entrepreneurial and innovation policy, including the RD&I strategy (see above). The Growth Strategy focuses on two main areas: the activities with major potential identified as part of the Smart Specialisation framework and groups of enterprises with major potential.</p> <p>The strategy takes an entrepreneur-oriented approach with action lines relating to the business model, development activities, manufacturing, sales and marketing, and</p>

Measure	Description
	competitiveness actions. The emphasis is on strategic customer management, enterprise development, fewer direct grants and more financial instruments. The strategy sets goals for the number of firms with a turnover in excess of EUR 125,000, the number of enterprises with at least 20 employees, labour productivity, the number of exporters and the share of Estonia in world trade, the increase in unit values, Estonia's position in international competitiveness and business rankings and for an increase in the share of private sector expenditure on R&D from 1.52% in 2011 to 2% in 2020.
Estonia 2020 Competitiveness Strategy (2012)	The Strategy identifies key policy priorities and describes measures to improve Estonia's competitiveness by the years 2015 and 2020 in line with objectives of the Europe 2020 Strategy. Amongst others, the Strategy aims to "improve the quality of the educational system and adapt it to demographic changes" by improving students' key competencies, promoting training, financing education and attracting highly qualified researchers to come and work in Estonia.
Higher Education Strategy (2006-2015)	The Estonian Higher Education Strategy aims to strengthen the international dimension of the national higher education system. In addition, it explores possibilities for boosting the competitiveness of Estonia's research institutions in the coming years. The document also explores the use of national and European Structural Funds to develop and implement practices set out in the Strategy.
Operational Programme for Human Resource Development (2007-2015)	The Operational Programme for Human Resource Development promotes progress towards a knowledge-based economy and society by means of a comprehensive support programme in the following priority areas: lifelong learning, R&D development, human resources in higher education, quality of working life, knowledge and skills for innovative enterprise, administrative capacity and activities for technical assistance. It is coordinated by the Ministry of Education and Research while all activities are financed through the European Social Fund.
Strategy for the Internationalisation of Estonian Higher Education (2006-2015)	In 2007, the Minister of Education and Research (MER) endorsed a Strategy for the Internationalisation of Estonian Higher Education (2006-2015) following an extensive national debate. Internationalising the higher education system is to achieve the following objectives: <ul style="list-style-type: none"> – Improve the international competitiveness of Estonia's higher education system; – Make Estonian higher education institutions more visible; and – Create a legal and institutional environment in support of internationalisation.

Source: Deloitte

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2010, the percentage of women grade A academic staff was 17.2% in Estonia compared with 15.4% among the Innovation Union reference group and an EU average of 19.8%⁷.

Committees, councils and other collegial bodies formed by the State or financing agencies usually include both sexes.

The number of women enrolling in higher education has increased in recent years and this has also been obvious in the number of R&D personnel. The share of female researchers has increased continuously since 1996, and their number is nearly equal to that of male researchers. In 2012, the ratio of female researchers in Estonia was 44% (compared to 41.7% in 2008, 42.5% in 2009, 43.4% in 2010 and 43.7% in 2011). This trend is also present in traditionally "masculine" areas like engineering, manufacturing and construction, where the share of women among graduates has grown. At the same time, the share of women in higher executive positions in R&D remains modest. The Estonia Rector's Conference Yearbook 2013 illustrates that there is also still a pay gap⁸.

The Gender Equality Act (2004) promotes policies addressing gender balance and encourages the State, local governments, agencies, educational and research institutions, and private companies to support gender

⁷ See Figure 1 "Key indicators – Estonia"

⁸ <http://www.ern.ee/images/dokumentid/aastaruanded/2013.pdf>

equality. Gender equality is explicitly referred to in the Constitution of the Republic of Estonia (Chapter II Fundamental Rights, Freedoms and Duties, § 12).

Measures to ensure a representative gender balance

The Estonian Government has not introduced specific gender quotas in support of gender equality either in the public or the private sector. Excellence is the main criterion for researchers to receive funding and to participate in decision-making bodies.

However, monitoring gender balance and equal opportunities in recruitment to research positions, in grant allocations and decision-making bodies is one of the priorities in the new RD&I Strategy 2014-2020, whereas earlier strategies did not refer to this. An enhanced awareness of the issue is illustrated by the fact that Estonia has been participating since 2013 in the COST Gender STE project.

Parental leave

In Estonia, female researchers are paid by the State during maternity leave. Since 2007, fathers have had the right to receive a “parental benefit” once the child is seventy days’ old.

The “Parental Benefits Act” provides parents with their average salary from the preceding calendar year for the time they temporarily take off work to care for their children. Parental leave is up to three years, but only the first half of that period is paid leave. All parents have the right to enjoy parental benefits. Part-time schemes and flexible hours are also promoted.

In awarding grants, periods during which a person was/is on parental leave are taken into account when analysing the eligibility criteria as part of the total number of years from obtaining a PhD degree.

If a researcher is part of the team of a project and the project ends during the parental leave, it is up to the host institution to find a research position in which to employ the researcher. In cases of personal research funding, the duration of the project is extended in the event of the principal researcher’s parental leave.

4. Open, transparent and merit-based recruitment

Recruitment system

In Estonia, the recruitment of researchers is considered as open and transparent.

Universities and R&D Institutions are fully autonomous in their recruitment policies. The Estonian public universities have signed an “Agreement on Good Practice in the Internationalisation of Estonia’s Higher Education”⁹ in support of the internationalisation of Estonia’s Higher Education Institutions. The Agreement encourages the employment of foreign research staff and the enrolment of international students. All universities hosting EURAXESS Service Centres have signed the Agreement.

Open recruitment in institutions

The table below presents information on open recruitment in higher education and public research institutions.

Table 3: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	Yes	The trend is to publish more on online platforms. According to the Organisation of Research and Development Act, §9 ¹⁰ and University Act, §34 ¹¹ , all regular teaching and research positions in R&D institutions have to be filled by public competition.
– publish job vacancies on relevant Europe-wide online platforms (e.g.	Yes	All professorships are openly recruited nationally and internationally. Institutions are encouraged to publish job

⁹ http://www.ern.ee/images/dokumentid/rahvusvahelistumine/agreement_best_practices.pdf

¹⁰ <https://www.riigiteataja.ee/akt/13243080>

¹¹ <https://www.riigiteataja.ee/akt/108112010008>

Do institutions in the country currently have policies to ...?	Yes/No	Description
EURAXESS)		openings on Europe-wide online platforms if the curricula provide international teaching.
– publish job vacancies in English	Yes	EURAXESS is recommended. The law does not require institutions to publish job vacancies in English.
– systematically establish selection panels	Yes/No	Several universities have made progress in establishing new election rules.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	No	-
– publish the composition of a selection panel (obliging the recruiting institution)	No	-
– publish the selection criteria together with job advert	Yes/ No	The selection criteria are published in the employment regulation rules of the universities, and are available on their websites. These rules are then referred to in the advert.
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	The university employment regulation rules seek to regulate a minimum time period between vacancy publication and the deadline for applying.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	Yes	The election rules in universities and the Estonian employment legislation are designed to ensure an open and transparent recruitment procedure.
– offer applicants the right to receive adequate feedback	Yes	Institutions offer applicants the right to receive adequate feedback based on the election rules (in most cases upon request).
– offer applicants the right to appeal	No	N/A

Source: Deloitte

EURAXESS Services Network

In 2013, the number of researchers posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 51.1 in Estonia compared with 72.3 among the Innovation Union reference group and an EU average of 43.7¹².

Information on entry conditions, transfer of social security and pension contributions, finding accommodation and administrative assistance is available on the EURAXESS Estonia portal (<http://euraxess.ee>) as well as through the EURAXESS Services Network Services Centres. A “Study in Estonia” portal is also available, which mainly addresses international students (<http://www.studyinestonia.ee>).

Most publicly funded research jobs are published online. Depending on the institution, either all or a selection of the vacancies is also advertised in English on the institution’s website. The EURAXESS Jobs portal is increasingly used in cases where universities are specifically looking for someone from abroad to fill the position.

5. Education and training

Measures to attract and train young people to become researchers

The number of PhD students¹³ (including in science and technology) has increased considerably over the last decade or so. The number of entrants rose from 280 for the academic year 2000-01 to 574 in 2010-11. In 2012-13, the number decreased slightly to 392 entrants, and was 387 in 2013-14. The decrease may be the

¹² See Figure 1 “Key indicators – Estonia”

¹³ The Estonian government aims to achieve 300 PhD graduates by the year 2015 (compared to 105 in 2002/03, 138 in 2003/04, 119 in 2004/05, 143 in 2005/06, 153 in 2006/07, 161 in 2007/08, 160 in 2008/09, 175 in 2009/10, 250 in 2010/11, and 190 2011/12). Currently, there is an efficiency problem with regard to doctoral studies: of those who started their studies between the 2003/04 and 2007/08, only 41% completed their studies between 2006/ 07 and 2010/11 despite several measures designed to boost the doctoral studies (for example doctoral schools, mobility schemes, new financing model)

result of implementation of significant Government reforms in the financing of higher education (started in 2011) and the implementation of a new financing model (2013).

The total number of doctoral students enrolled in Estonian universities rose from 2 381 in 2007-08 to 2 982 in 2013-14, compared to 3 044 in the previous academic year.

The proportion of women in the higher education system has increased steadily over the last few years, from 51% in 1993-94 and appears to have stabilised at around or just below 60% (60% in 2010-11¹⁴, 59% in 2011-12 and 58% in the last two academic years.) Female researchers are relatively well represented in Estonia and in particular, in traditionally “masculine” areas like engineering, manufacturing and construction. Nevertheless, the number of women in higher executive positions in R&D remains modest. The number of women doctorate holders among R&D personnel nearly doubled between 2000 and 2011. Male researchers now only slightly outnumber male researchers.

The new RD&I Strategy (see chapter 2 “National Strategies”) sets a target of 300 PhD graduates per year by 2020, postponing by five years the date for reaching this target set in earlier strategies. Moreover, the majority of doctoral candidates interrupt their studies or show low work efficiency. Many doctoral students work outside the university as the doctoral allowance is insufficient. Moreover, the social security costs met by universities only cover health care; they must rely on their other employers for pension and other social security coverage.

Consequently, the increases in the number of researchers and doctoral graduates are still not enough to meet what is needed to change the structure of the economy and society. As a result, considerable attention is being paid in the new 2014-2020 programming period to doctoral studies and doctoral students as researchers.

The new career model for researchers has introduced positive changes in the status of PhD students since 2012. All officially recognised doctoral candidates receive a doctoral allowance (if their profile is that of a doctoral student). It is also possible to hire doctoral students as early-stage researchers. They also receive social security coverage.

The development of science and technology is a national priority for the Estonian government. Following a few years of decline in the late 1990s, the proportion of students in science, technology, engineering and mathematics (STEM) subjects is gradually increasing. It was 26% in 2010-11, 27.6% in the following academic year and 28.3% in 2013-14. Absolute numbers have fallen slightly, however, over the same period — from 17 792 in 2011-12 to 16, 953 in 2013-14 (in 2012-13, the number was 17 897).

The number of research personnel is on the increase. The number increased by 8% in 2011. The time worked by researchers increased by 12% in the enterprise sector and 8% in non-profit institutions. The number of researchers has quadrupled in the enterprise sector and by a third in the non-profit institutional sector since the turn of the century. The number of doctors among research personnel has increased by more two thirds over the same period.

Under the Estonian Research and Development and Innovation Strategy 2007-2013, the Estonian Government put emphasis on attracting talented school children and guiding them to become researchers. The government created programmes and improved existing initiatives aimed at improving the image of the R&D profession and thus attracting young people to become researchers. Popularising science and science education in society is an aim in the new 2014-2020 programming period as well. It is seen as important to ensure adequate career information about the career opportunities for researchers in the public as well as in the business sector and to engage more companies as potential employers in taking part in popularisation activities and encouraging research institutions, businesses and schools to work together in popularising STI in the development of teaching materials, and supporting schoolchildren’s “hobby education” in this area.

¹⁴ At a glance: 61% in 2006/07, 62% in 2007/08, 62% in 2008/09 and 61% in 2009/10.

The table below summarises the key measures implemented to achieve this objective during the programming period 2007-2013 (activities within which last till 2015). New initiatives under the new strategy are in the development phase.

Table 4: Human Resources – Key programmes and initiatives

Measure	Description
AHHAA Science Centre	<p>The AHHAA Science Centre is one of the oldest and most successful science centres in Eastern Europe. Founded by the University of Tartu, the City of Tartu and the Ministry of Education and Research, its chief purpose is to use interactive tools to introduce science to people. The initiative also serves to strengthen the scientific excellence of participating researchers.</p> <p>Since its foundation in 1997, the AHHAA Science Centre has supported a series of events, exhibitions, science festivals, workshops, and science theatres, and has welcomed approximately one million visitors. Since its opening in May 2011, the new AHHAA Science Centre in Tartu has attracted tens of thousands of visitors from Estonia, Latvia and Russia. In 2012, it hosted some 173 500 visitors.</p>
Association of Young Scientists (ongoing)	<p>The Association of Young Scientists actively promotes careers in science and technology among secondary school students by involving them in the everyday work of different research groups and prominent scientists. Its activities are supported by the Ministry of Education and Research and are coordinated by the Estonian Research Council¹⁵.</p>
Pupils' Inventor Contest (ongoing)	<p>The Pupils' Inventor Contest has become one of the most popular and most successful contests in Estonia. Schools organise science conferences and seminars at which students present and discuss their work, and meet with scientists. The contest encourages competition among students. The initiative is coordinated by the Estonian Research Council.</p>
Science communication programme TeaMe (2009-2015)	<p>Financed by the European Social Fund, the TeaMe Programme promotes young people's interest in science and technology (S&T). It targets young Estonians (14-26 years), general education and secondary school teachers, journalists covering science and technology (S&T) topics, researchers, scientists and engineers. The Programme pursues the following objectives:</p> <ul style="list-style-type: none"> – Encourage young people's interest in S&T and improve the image of S&T-related professions; – Expand the scope of Estonia's science media; and – Bring science closer to the people and increase its visibility in the media. <p>The TeaMe Programme is coordinated by the Estonian Research Council while the Estonian Public Broadcasting functions as a partner organisation exploring the opportunities in the science media. The total budget is EUR 3.3 million.</p>
Teeme Call (2009-15)	<p>In 2009, the Teeme Programme was launched in support of education in Mathematics, Science and Technology (MST). It provides public funding for science communication events, science camps, technology days, and get-together activities for university students and high school pupils. The total budget is EUR 1 million.</p>
The Gifted and Talented Development Centre at the University of Tartu (GDTC)	<p>The Gifted and Talented Development Centre at the University of Tartu offer pupils interested in science an opportunity to further develop their scientific knowledge and skills. Talented (elementary school and high school) pupils can choose from various enrichment courses offered in the GDTC curriculum. The GDTC has developed teaching courses for teachers and schools supporting individualised learning which prove useful for extracurricular activities.</p>
The Science Bus <i>Suur Vanker</i> ('Big Dipper') (ongoing)	<p>Using the Science Bus <i>Suur Vanker</i> ('Big Dipper', i.e. Ursa Major), physics students from the University of Tartu and from the Estonian Physical Society demonstrate interesting physical experiments to the general public. The chief objective of the Science Bus is to bring physics and science closer to school children and to communicate science by means of shows and experiments. In 2006, the Science Bus and its team received the "European Descartes Prize for Science Communication".</p>

Source: Deloitte

¹⁵ The Estonian Research Council (www.etag.ee) is a funding agency for Estonian research, established on the 1st of March 2012. The Estonian Research Council is a government foundation that was established as a successor to the Estonian Science Foundation and merged with the Research Cooperation Centre of the Archimedes Foundation

Doctoral graduates by gender

The table below shows the number of doctoral graduates in Estonia by gender as a ratio of the total population.

Table 5: Doctoral graduates by gender

Indicator	Estonia	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2011)	1.3	1.7
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2011)	1.3	1.6
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2011)	1.2	1.8

Source: Eurostat

Data: Eurostat

Funding of doctoral candidates

The table below summarises different funding opportunities for doctoral candidates.

Table 6: Funding schemes available to doctoral candidates

Funding scheme	Description
Fellowship	There is a state-financed doctoral allowance to cover full doctoral study time (nominal time in Estonia is 4 years). From the 2012 admissions year, all doctoral candidates who have received certification under the terms and conditions, and pursuant to the procedure established by the council of the university, or are first-year students in a state-commissioned study place have a right to receive the allowance.
Stipend/Grant	In Estonia, it is permitted for doctoral students to receive stipends from research grants and, for example, from doctoral schools. Some enterprises also pay stipends to doctoral students who are enrolled in a subject area linked to the enterprise's business.
Employment contract	Since 2012, the position of an early-stage researcher (<i>nooremteadur</i>) as part of the researcher's career model has also been open to doctoral candidates. A Master degree is required for an early-stage researcher position (Organisation of Research and Development Act). This targets doctoral students with the ultimate aim of enhancing their motivation and boosting candidates' confidence by offering full social security coverage.

Source: Deloitte

Measures to increase the quality of doctoral training

The Estonian Government focuses on the enhancement of the quality and efficiency of doctoral studies through the organisation of doctoral schools, mobility opportunities for both incoming and outgoing researchers, and the development of entrepreneurship (by introducing economics courses and modules for students of non-business studies in all three university circles¹⁶).

The table below summarises the main measures introduced by the Estonian Government in support of doctoral training during the 2013-2017 programming period, which covers activities up to 2015. New initiatives under the new R&D&I strategy are in the development phase, but doctoral studies will definitely be a key priority in research human resource policies.

Table 7: Measures to increase the quality of doctoral training

Measure	Description
Doctoral Schools (ongoing)	<p>Doctoral schools were set up in 2005. In 2009, thirteen new Doctoral Schools were selected for the period 2009-15. Their aim is to improve the quality of doctoral candidate tutoring and to increase the efficiency of doctoral studies in Estonia through interdisciplinary, international and national cooperation. Apart from mobility opportunities, winter and summer schools and study programmes, doctoral schools propose transferable and social skills training to promote interdisciplinary research and enhance cooperation between universities and the private sector.</p> <p>From 2010, students who have interrupted their doctoral studies are welcome to continue and finish their studies – i.e. they are given a second chance. Those resuming doctoral studies may participate in doctoral schools. These help them find supervisors and participate in summer schools, conferences and mobility activities provided by doctoral schools. At least two partners need to be involved: they can be</p>

¹⁶ Bachelor, Master and Doctoral studies.

Measure	Description
	an Estonian university, an R&D institution, the public sector or companies. Doctoral schools are project-based and are funded by the European Social Fund. The total budget is EUR 16.9 million for 2009-15.
Mobility programmes	See chapter 8 “Mobility and international attractiveness”.
Primus Programme (2008-2014)	<p>The Primus Programme aims to improve the professional competitiveness of higher education institution graduates. It supports six activities:</p> <ol style="list-style-type: none"> 1. Improvement of the teaching and supervising skills of teaching staff; 2. Development of high-quality education based on learning outcomes; 3. Development of the quality of recognition of prior learning and professional experience; 4. Support for strategic management capacity building in higher education institutions; 5. Carrying out surveys and analyses on higher education; and 6. Development of student support services. <p>The Programme is financed by the European Structural Funds. The total budget is EUR 14.6 million for 2008-14. The programme is coordinated by the Archimedes Foundation.</p>

Source: Deloitte

Skills agenda for researchers

In Estonia, doctoral study programmes usually include training in transferable skills¹⁷ to improve researchers' employment skills and competencies (based on the Standard of Higher Education, Regulation No 178 of 18 December 2008). Doctoral schools, curricula development activities, lectures, seminars, practical training classes, laboratory work and individual classes can be developed by each institution with the aim of acquiring knowledge and achieving better learning outcomes for participants.

Many doctoral students are involved in different projects to make science and technology more attractive for young people but also to develop their own communication skills. Extra courses are mostly project-based and are financed by Government.

The Estonian Rectors' Conference has endorsed a “Quality Agreement”¹⁸ among Estonian universities (six public universities and one private) encouraging the inclusion of transferable skills' training in doctoral studies curricula.

6. Working conditions

Measures to improve researchers' funding opportunities

Centres of Excellence and postdoctoral grants are on the priority list for the new programming period as they were in the 2007-2013 programming period. The table below presents the measures to improve funding opportunities for researchers in Estonia during the 2007-2013 programming period, which covers activities extending to 2015:

Table 8: Measure to improve researchers' funding opportunities

Measure	Description
Centres of Excellence (2007-2013) (ongoing till 2015)	<p>Centres of Excellence support the development of Estonian research so as to strengthen Estonian competitiveness at European level. Currently, there are 12 Centres of Excellence in Estonia:</p> <ol style="list-style-type: none"> 1. Frontiers in Biodiversity Research; 2. Centre of Excellence in Genomics; 3. Centre of Excellence for Translational Medicine; 4. Centre of Excellence in Computer Science; 5. Centre of Excellence in Chemical Biology; 6. Centre of Excellence in Cultural Theory; 7. Centre for Integrated Electronic Systems and Biomedical Engineering; 8. Centre of Excellences in Frontiers in Biodiversity Research;

¹⁷ Transferable skills are the skills that can be used chosen by a student, regardless of his/her specific field of study.

¹⁸ Adopted on 11 June 2003; renewed on 8 September 2011. Available at: http://www.ern.ee/images/dokumendid/kvaliteedilepe/allkirjastatud_head_tavad.pdf (in Estonian).

Measure	Description
	<p>9. Centre of Excellence in Environmental Adaptation; 10. Mesosystems – Theory and Applications; 11. Centre of Excellence High-Technology Materials for Sustainable Development; 12. Centre for Nonlinear Studies.</p> <p>The Centres are financed by the European Regional Development Fund. During the period 2007-13, nearly EUR 49.02 million has been allocated to the Centres of Excellence.</p>
ERMOS Programme (Estonian Research Mobility Scheme) (2007-2013)	<p>The ERMOS Programme aims to develop and diversify Estonian research potential through the mobility of researchers and the development of young researchers' careers. The Programme is implemented by the Estonian Research Council. It was financed by the Marie Curie COFUND under the People strand of FP7. The duration of the postdoctoral grant was two or three years. The total budget was EUR 4.6 million. These grants will be financed from the state budget in future. The grant covers remuneration, research expenses and a one-time relocation allowance.</p>
The Mobilitas researcher mobility programme (2008-2015)	<p>The Mobilitas researcher mobility programme helps fund postdoctoral researchers and top-performing researchers to carry out research in Estonia or abroad:</p> <ul style="list-style-type: none"> - Post-doctoral grants (two to three years duration) are open to incoming post-doctoral researchers and to Estonian post-doctoral researchers going abroad; - Top-performing researchers are financed (for three to five years) to come from abroad to work in an Estonian R&D institution. <p>The prime objective of the programme is to activate an international exchange of researchers and to foster knowledge transfer. The Programme is implemented by the Estonian Research Council. The Programme's total budget amounts to EUR 20.3 million, of which up to 85% is granted by the European Social Fund. State funding is no less than 10% and partner self-financing (Estonian R&D institutions) is at least 5%.</p>

Source: Deloitte

Remuneration

In order to increase researchers' salaries, all State budget-financing instruments related to researchers' salaries were increased by 30% in the 2008 budget. However, the 2009 economic downturn has led to salary cutbacks in the research sector.

R&D personnel in enterprises are younger and better paid. The enterprise sector differs substantially from the non-profit sectors in terms of the average age of the researchers employed; the average age of researchers in the enterprise sector was 39 years old in 2012, compared to 46 years old in the non-profit sectors. To some extent, the preference for youth is explained by the difference in the labour costs per researcher (FTE) devoted to R&D. In the enterprise sector, these labour costs increased from EUR 37 900 in 2011 to EUR 50 600 in 2012. In the non-profit sectors, the rise was from EUR 21 900 to EUR 23 400

For further information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website¹⁹.

Researchers' Statute

The Estonian Government does not promote a concrete researcher's 'statute'. Universities are not obliged to hire doctoral students as research fellows. However, doctoral students can work in universities as an early-stage researcher or a lecturer's assistant and at the same time they still have student status and student benefits.

'European Charter for Researchers' & 'Code of Conduct for the Recruitment of Researchers'

In September 2011, the Rectors' Conference, representing all universities in Estonia, signed an "Agreement on Good Practice Regarding Quality". Point 10 of the Agreement refers to the implementation of the 'Charter & Code'²⁰.

¹⁹ <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

In addition, in 2011, the Rectors' Conference participated in the second cohort of the European Commission Institutional Human Resources Strategy Group. The Estonian Research Council (previously Estonian Science Foundation) participates in the third cohort and four more R&D institutions are in the fourth cohort. The Estonian Research Council is conducting a national gap analysis which was under way at early 2014.

Autonomy of institutions

In Estonia, universities and R&D institutions enjoy high levels of autonomy over their personnel policies. Provisions on researchers' salaries and working conditions are covered by the Employment Contracts Act of 2008²¹ as well as in the individual regulations of each university or R&D institution.

Career development

Under the Research and Development Organisation Act (1997)²² and the Universities Act (1995)²³, all regular teaching and research positions in R&D institutions are subject to public competition.

The table below provides an overview of teaching and research positions in Estonia.

Table 9: Teaching and research positions

Teaching positions	Research positions
– Teacher	– Early-stage researcher ²⁴
– Assistant	– Researcher
– Lecturer	– Senior Researcher
– Dotsent (Associate Professor)	– Leading Researcher
– Professor	
– Professor Emeritus	

Source: Deloitte

Currently, professors are granted tenure if they have worked for the same university²⁵ and more than eleven years of experience as a professor have been evaluated by the University Council.

Shift from core to project-based funding

In Estonia, funding has shifted from core to project-based funding. Therefore, the funding is oriented towards supporting high-level R&D to guarantee the consistency and sustainability of a research field in Estonia.

The table below presents competitive and institutional funding instruments in the national R&D budget of the Estonian Ministry of Education and Research.

Table 10: National R&D budget allocation (2008-2012)²⁶

	2008	2009	2010	2011	2012
Competitive (grants + targeted funding) EUR million	26.3	34.0	32.6	31.1	31.0
Institutional (base-line + infrastructure) EUR million	12.1	15.7	14.8	14.1	14.0

Source: from ERAC Peer-Review of the Estonian Research and Innovation System. Steady Progress Towards Knowledge Society (2012)²⁷

The largest funding instruments are the institutional research funding and personal research funding. Institutional research funding enables R&D institutions to fund high-level research and development activities

²⁰ "Universities recognise the main principles of C&C. Universities will improve and strengthen their human resources in science following the general principles and requirements and values also in their future initiatives to develop a researcher career and an attractive, sustainable and open labour market"

²¹ Available at: http://www.sm.ee/fileadmin/meedia/Dokumentid/ASO/TLS/TLS_ENG.pdf

²² Available at: <http://www.enop.ee/tpi/digioppe/Estonian%20Organisation%20of%20R&D%20Act%202004.pdf>

²³ Available at: <http://www.legaltext.ee/en/andmebaas/tekst.asp?loc=text&dok=X60039K4&keel=en&pg=1&ptyyp=RT&tyyp=X&query=Universities+Act>

²⁴ Including doctoral candidates; a Masters' degree is required

²⁵ In total, 11 years in the same position

²⁶ Source: Estonian Ministry of Education and Research

²⁷ ERAC Peer-Review of the Estonian Research and Innovation System <http://www.hm.ee/index.php?popup=download&id=11652>

and to modernise and maintain the necessary infrastructure. Personal research funding is funding allocated for the research activities of individuals or research groups. Both instruments are competition-based.

Social security benefits (sickness, unemployment, old-age)

In Estonia, all researchers are considered as employees and are entitled to full social security coverage, including health insurance and sickness benefits. The Estonian Health Insurance Fund pays the benefit to the insured person based on the certificate of incapacity for work. Benefits for temporary incapacity for work include sickness benefits, care allowance, maternity benefits and adoption allowance.

Doctoral candidates have access to health insurance, but are not eligible for sickness and unemployment benefits or pensions, unless they are hired by the university under an employment contract. In that case, they enjoy full social security coverage. Since 2012, the state has encouraged and supported universities in hiring doctoral students as early-stage researchers despite the fact that most of the doctoral candidates are already working, not necessarily as researchers, and receive full social security coverage as employees.

Under the Universities Act, students (including doctoral candidates) have the right to take a sabbatical of up to one year once at each academic level. In addition, students are granted the right to take additional academic leave (of up to two years) for health reasons. Students can interrupt their academic career (by up to one year) to serve in the Defence Forces and can take parental leave at any time up to the child’s third birthday.

7. Collaboration between academia and industry

The research climate seems to be undergoing radical changes. Researchers are increasingly considered as “experts/consultants” by large companies (but not SMEs), which turn to universities as cooperation partners in the innovation processes. In 2012, more than 250 enterprises declared some intramural R&D expenditure. The actual number of enterprises and their situation is better illustrated by the fact that just 50 enterprises accounted for 90% of the enterprise sector’s intramural R&D expenditure in 2012

The Estonian Government is in the process of increasing the acquisition of knowledge with application value in universities and R&D institutions, and simultaneously increasing the private sector’s demand for R&D.

The following table summarises programmes designed to develop (more) partnerships between industry and academia, and to foster doctoral training in cooperation with industry during the programming period 2007-2013 (ongoing till 2015, while the new R&D and Entrepreneurship programmes are put in place).

Table 11: Collaboration between academia and industry

Measure	Description
Ajujaht Business plan competition (ongoing)	Ajujaht (Brainhunt) is a start-up competition for young entrepreneurs creating innovative businesses. The competition aims to promote an entrepreneurial mindset and create incentives for Estonian businesses. The competition is open to teams of 1-7 members of whom 50% must have Estonian residence and be aged 17-35. The development programme concludes with the submission of business plans. The jury evaluates both business plans and presentations. The best plans share in the prize fund of EUR 95 000 and have the possibility of entering a one-year support programme for execution of their business plan. The competition has its own TV show. This annual competition is carried out under the Enterprise Estonia awareness programme co-funded by the European Social fund. The total budget is between EUR 500 000 and 850 000.
DoRa Doctoral Studies and Internationalisation Programme, Activity 3 Training doctoral students in cooperation with businesses (2008-2015)	Activity 3 of the “DoRa” Programme - Training doctoral students in cooperation with businesses – actively assists innovative companies by funding the creation of doctoral student places. In order to be admitted to the programme as a partner, businesses must be engaged in a development activity with solid application prospects. In addition, companies must show willingness to conclude an employment contract with the doctoral student while paying at least the legal minimum wage. Partner universities must find a suitable partner and are responsible for the quality and progress of the studies. Eligible expenditures include the student’s tuition fees, a monthly stipend and the remuneration of the student’s co-supervisor at the company. Supported places are funded on the same terms as those applying to

Measure	Description
	<p>doctoral studies under the Estonian funding scheme for government-funded provision of higher education.</p> <p>The programme fosters development in the priority areas specified in Estonia's national RD&I strategy (i.e. information and communication technology, materials technology, environmental technology, biotechnology, power engineering and health). Eligible partners are Estonian universities offering accredited PhD programmes in the priority areas. The programme is funded by European Structural Funds. The total budget is EUR 33.5 million.</p>
Innovation Voucher Grants (2007-2013)	Innovation Voucher Grants aim to boost the competitiveness of Estonian SMEs through knowledge and technology transfer, expanding cooperation with R&D institutions and increasing the capability to protect intellectual property rights (IPR). Grants up to EUR 4 000 are provided to entrepreneurs for the procurement of innovation services. The total budget is EUR 2.9 million.
Joint activities of Ministry of Economics and Communication, and Ministry of Education and Research (2009-2013)	<p>The activities include:</p> <ul style="list-style-type: none"> - Supporting the development of entrepreneurship; - Introducing economics courses and modules for students of non-business studies, followed by updating curricula in higher education institutions (prioritising science and engineering); - Increasing funding for the above-mentioned courses; - Providing opportunities for teaching personnel to refresh their competencies; - Launching mobility schemes to facilitate two-way movement between academia and enterprises; - Developing a joint Technology Management programme at Tallinn University of Technology and the University of Tartu to support students while testing their business ideas.
Product Development Grants (2007-2013)	Product Development Grants are available to entrepreneurs and universities in support of the development of products and services with high added-value. Grants are provided for the preparation of product development or applied research.
SPINNO Programme (2007-2013)	The SPINNO Programme was launched by the Ministry for Economic Affairs and Communications to promote cooperation between research and development institutions and enterprises. It also supports knowledge- and technology transfer in Estonian research institutions. The programme is co-financed by the European Union Structural Funds through Enterprise Estonia ²⁸ . The total budget is EUR 7.7 million.
Technology Competence Centre Grants (2007-2013)	Technology Competence Centre grants aim to increase Estonia's international competitiveness by strengthening cooperation between entrepreneurs and research establishments in line with the Knowledge-Based Estonia Strategy. Grants are co-financed by the European Regional Development Fund. (Total budget: EUR 62.9 million.)

Source: Deloitte

8. Mobility and international attractiveness

In 2011, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 5.6% in Estonia compared to 18.4% among the Innovation Union reference group and an EU average of 7.7%²⁹. In the same year, non-EU doctoral candidates were 4.2% of all doctoral candidates in Estonia compared with 16.9% among the Innovation Union reference group and an EU average of 24.2%.

In academic year 2013-2014, there are approximately 2 230 foreign degree students studying in Estonia, i.e. students who are not citizens of Estonia. Thus the goal set in the Estonian higher education internationalisation strategy of 2,000 foreign students by the year 2015 will have been achieved if this level is sustained. The figure for 2013-2014 represents 3.7% of the total student body. In addition, there are more than 1 200 Erasmus exchange students and more than 700 participants in the summer and winter schools in 2013-14). Compared to the previous academic year, the number of foreign degree students has grown by 320 (and compared to 2009-10 by 800). The number of mobile students, i.e. students who are not normally

²⁸ Enterprise Estonia (EAS), which was established in 2000, promotes business and regional development in Estonia. EAS is one of the largest institutions within the national support system for entrepreneurship, providing financial assistance, advisory, cooperation opportunities and training for entrepreneurs, research establishments, public and third sector

²⁹ See Figure 1 "Key indicators – Estonia"

resident in Estonia, has increased at every educational level. At the doctoral level, the percentage of foreign students was 5.8% in 2010-11, 6.5% in 2011-12, 7.2% in 2012-13 and 8.1% in 2013-2014³⁰.

This continuous increase reflects the implementation of various programmes encouraging the growth in the number of foreign students as well as the positive feedback on Estonian education and the learning environment from foreign students who have already studied in Estonia. According to the international iGraduate survey³¹ (2012), 90% of foreign students studying in Estonia were satisfied with their studies in Estonia. They consider Estonia to be a safe and good place to live. They were also satisfied with the prices and leisure activities, and with the support services for international students, while only the difficulty in finding a job during their studies was a source of dissatisfaction.

The number of foreign researchers working in Estonia has increased from 58 (from 19 foreign countries) in 2004 to 295 (from 51 foreign countries) in 2011, and to 351 in 2012 (from 53 foreign countries). Estonia attracts researchers from a large variety of different countries. In most cases there are only 1–2 researchers per country. However, more than one third of the researchers come from three countries: Russia, Germany and Finland (13.7%, 13.4% and 8.5% respectively in 2012)

Measures aimed at attracting and retaining 'leading' national, EU and third country researchers

The table below summarises key measures aimed at attracting and retaining leading national, EU and third-country researchers during the 2007-2013 programming period. Increasing internationalisation of researchers and R&D institutions is also one of the key priorities in the new programming period (2014-2020).

Table 12: Measures to attract and retain leading researchers

Measure	Description
ERMOS programme	See chapter 6 "Working conditions".
Mobilitas programme	See chapter 6 "Working conditions".
The DoRa Doctoral Studies and Internationalisation Programme (2008-15)	<p>The programme³² targets master and doctoral students as well as academic staff already working or studying at Estonian higher education institutions or planning to do so. DoRa aims to enhance Estonia's capacity to employ highly qualified specialists from abroad, or train them in Estonia, and thus improve Estonia's overall capability in the field of research and innovation. The total cost of the programme is EUR 33.5 million for the period 01.01.2008–31.05.2015; the support is divided into support from the European Social Fund up to 73% (EUR 24.6 million), state financing 9% (EUR 2.9 million) and partner self-financing 18% (EUR 6 million).</p> <p>The key relevant activities are:</p> <ul style="list-style-type: none"> - Activity 2: Improve the quality of higher education by supporting the employment of international teaching staff. In 2008, the programme supported HEIs in hiring highly skilled international teaching staff for a long-term period up to 5 years. Since 2012, it has been supporting the HEIs in hiring highly skilled international teaching staff for short periods of between 1-10 months and allowing for a maximum of two visits per person; - Activity 4³³: Expand the pool of specialists holding PhDs by supporting the enrolment of talented international students in the doctoral programmes of Estonian universities. Eligible expenses covered by the programme are a monthly grant, a fixed travel grant, a grant to cover the cost of health insurance and a mobility allowance per year. - Activity 5: Facilitate international research cooperation by supporting short-term research projects of visiting doctoral students in Estonia (up to 1-10 months and two visits per person maximum). Eligible expenses are a monthly living allowance, an additional grant to cover health insurance and an additional fixed travel grant³⁴.

³⁰ Compared to 3.1% in 2006-07, 2.9% in 2007-08, 2.9% in 2008-09, 5.1% in 2009-10.

³¹ Available at: <http://www.i-graduate.org/>

³² Available at: http://www2.archimedes.ee/amk/File/DoRa/2010_DoRa_ENG.pdf

³³ Available at: <http://www.studyinestonia.ee/study/scholarships/international-phd-students/phd-programme>

³⁴ Available at: <http://www.studyinestonia.ee/study/scholarships/international-phd-students/visiting-phd-students>

Measure	Description
	<ul style="list-style-type: none"> - Activity 9: Support for international students' master's studies in Estonia (<i>stipendium per year</i>)³⁵. <p>See also chapter 7 "Collaboration between academia and industry".</p>

Source: Deloitte

Inward mobility (funding)

In Estonia, the main obstacles to researcher mobility have been identified as:

- Remuneration; and
- Difficulties in obtaining an Estonian visa/residence permit from countries where Estonia does not have representation.

The Estonian Government offers university students, researchers or lecturers a variety of scholarships for studying and carrying out research at Estonian public universities and institutions (e.g. the DoRa Programme, the Mobilitas Researcher Mobility Programme, the ERMOS programme).

Most Estonian institutions have concluded agreements with foreign higher education institutions and promote scholarships for international degree programmes. Researchers are also able to opt for other international scholarships (e.g. Compatriots' scholarships³⁶, Erasmus+, international companies' grants, Marie Curie grants etc.)

Outbound mobility

The table below summarises key measures encouraging researchers to spend some time in another country.

Table 13: Measures supporting researchers' outbound mobility

Measure	Description
DoRa Doctoral Studies and Internationalisation Programme (2008-15)	<p>This Programme targets Master and doctoral students and academic staff who are already working or studying at Estonian higher education institutions or are planning to do so:</p> <ul style="list-style-type: none"> - Activity 2: Encouraging short-term visits for outgoing Estonian teaching staff for 1-6 months (eligible expenditures include a salary, travel expenses and a relocation allowance); - Activity 6: Developing international cooperation networks by supporting the mobility of Estonian doctoral students for 1-5 months (eligible expenses are living allowance, a travel grant); - Activity 7: Strengthening the international dimension in higher education by supporting the mobility of Master's students for 1-6 months (eligible expenses are a living allowance and a travel grant); and - Activity 8: Supporting the participation of young researchers in the international exchange of knowledge for 3-21 days (eligible expenses are participation fee, travel expenses, living allowance and a grant to cover accommodation).
Kristjan Jaagu stipendiumid (ongoing)	This Programme targets Master's and doctoral students to support them in making research trips to foreign universities.
Researcher mobility programme Mobilitas (2008-15)	See chapter 6 "Working conditions".

Source: Deloitte

Promotion of 'dual careers'

The University of Tartu is a partner in the EURAXESS TANDEM project "Talent and extended mobility in the European Innovation Union"³⁷. The two-year project (1 October 2012 - 30 September 2014) will focus on combining Dual Career and Recruiting offices, and EURAXESS Service Centres. The team members from four different academic institutions in Europe will strengthen EURAXESS Service Centres' activities by adding a complementary focus on dual career and integration aspects. TANDEM will:

³⁵ Available at: <http://www.studyinestonia.ee/study/scholarships/international-master-students>

³⁶ Compatriots' scholarships support the studies of young expatriate Estonians in Estonia's public universities, national institutions of applied higher education and vocational education centres

³⁷ Available at: <http://www.euraxess-tandem.eu/>

- Analyse the basic requirements for the successful implementation of Dual Career and Integration Initiatives;
- Develop a systematic and modular approach to these services; and
- Place a special focus on 'brain circulation', and how Dual Career and Integration Initiatives could influence this positively.

Portability of national grants

The Estonian Research Council has signed up to the EUROHORCs Money Follows Researcher Letter of Intent and has agreed to finance research carried out in foreign institutes after it has been initiated in an Estonian R&D institution. Grant holders can apply to transfer their research grants only if the host country institution of has also signed up to the Letter of Intent.

Access to cross-border grants

The Estonian Research Council awards institutional and personal research funding. Grant competitions are open to all permanent residents of the Republic of Estonia and citizens of a foreign country. Grants should be applied for through an Estonian Institution.