

The Researchers Report 2012

Country Profile: Italy



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1. Key data

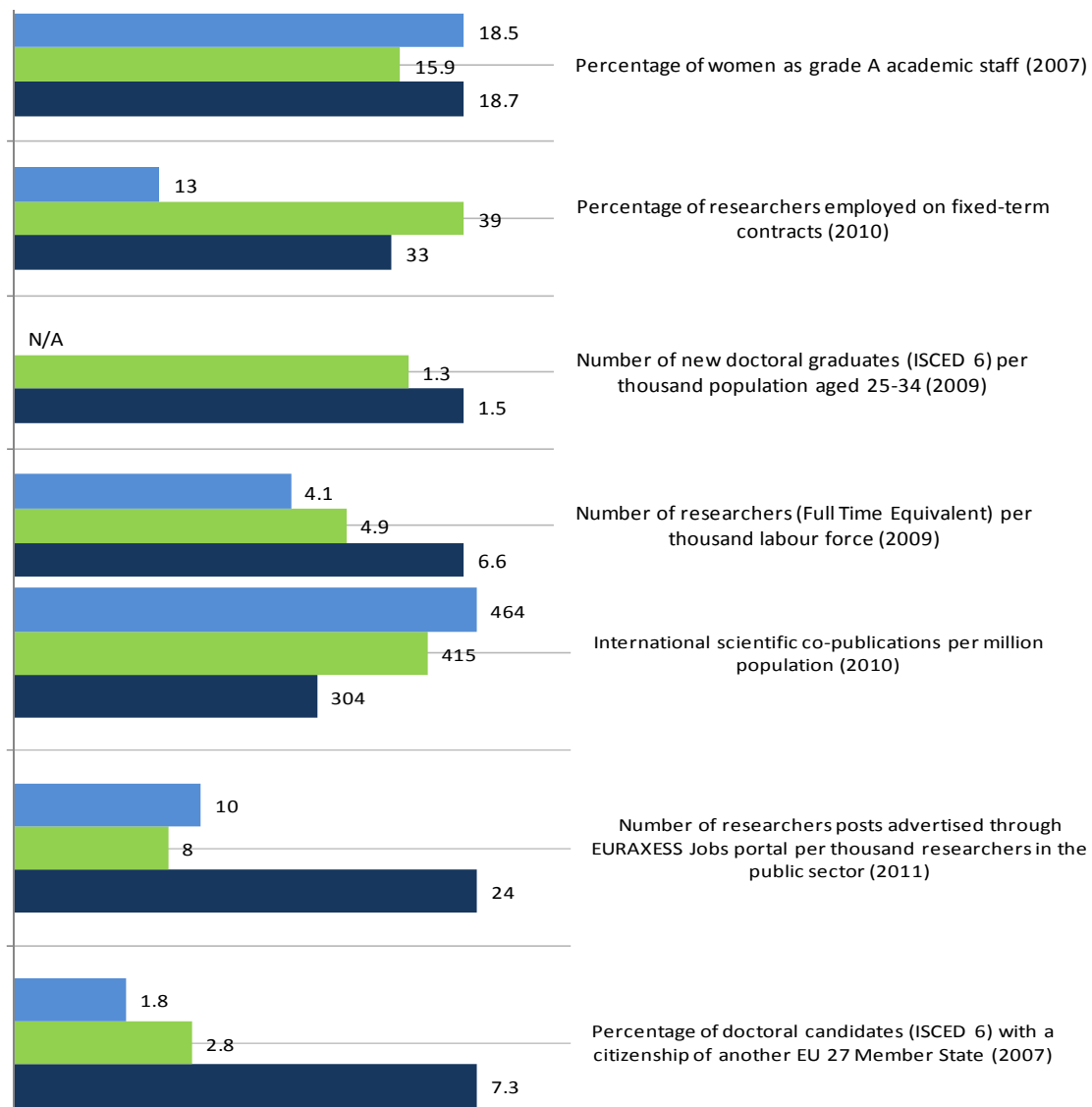
National R&D intensity target

“R&D intensity in Italy increased around 2.3 % annually over the 2000-2009 period, passing from 1.05 % of GDP in 2000 to 1.27 % in 2009. Both public and private R&D have grown during the period, but modestly. In 2009, public R&D intensity was 0.57 % and private R&D intensity was 0.64 %. Considering the 2020 R&D target, Italy set the value of 1.53 %. Given the trend scenario presented below, this target is achievable but is not ambitious. The difference between Italy's R&D intensity (1.27 %) and the EU-average (1.90 %) is mainly due to lower industrial R&D (business R&D intensity in Italy is 0.64 % of GDP compared to an EU-27 average of 1.23 % of GDP).”¹

Key indicators measuring the country's research performance

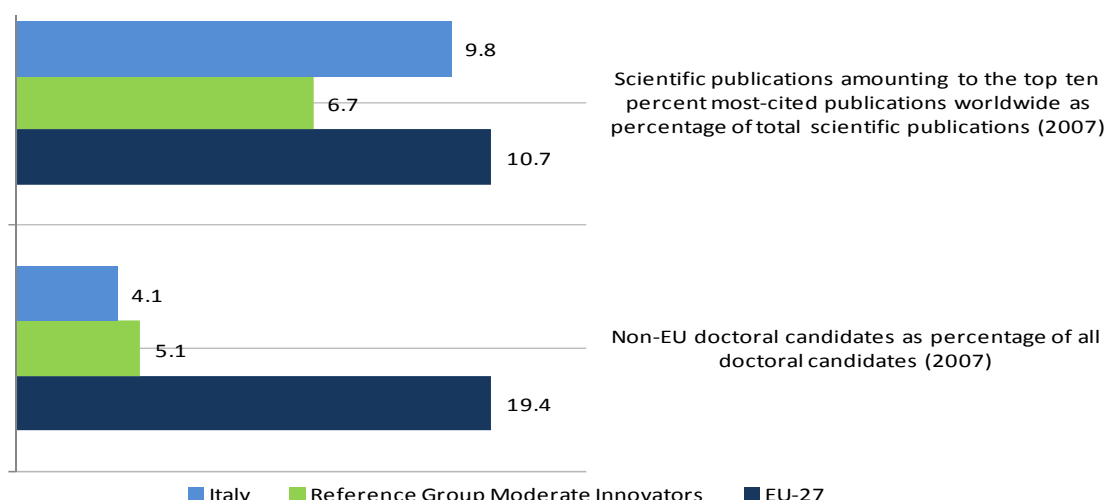
The figure below presents key indicators measuring Italy's research performance against a reference group and the EU-27 average².

Figure 1: Key indicators – Italy



¹ European Commission (2011), “Innovation Union Competitiveness Report 2011”.

² The values refer to 2011 or the latest year available.



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, Science Metrix/Scopus (Elsevier), Innovation Union Scoreboard 2010

Notes: Based on their average innovation performance across 24 indicators the Czech Republic, Greece, Hungary, Italy, Malta, Poland, Portugal, Slovakia and Spain show a performance below that of the EU27. These countries are the Moderate innovators³.

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	Italy	EU Average
Head Count per 1 000 active labour force population (2008)	5.80	9.45
Head Count (2008)	145 623	-
FTE per 1 000 active labour force population (2009)	4.08	6.63
Full time equivalent (FTE) (2009)	101 821	-

Source: Deloitte

Data: Eurostat

2. National strategies

Italy has introduced a broad range of programmes and initiatives 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 Italy's R&D targets, to promote attractive working conditions, and to address gender and dual career issues.

Table 2: National strategies

Measure	Description
Law 240/2010 on the General Reform of University Education (2010)	The Law on the General Reform of University Education introduced a new procedure in relation to the research profession 'career ladder' in state-owned universities. In addition, it has set out a two-step process for researchers' careers ⁴ . Its Articles cover several relevant topics, e.g. researcher statutes, industry-academia partnerships, etc. Gender equality provisions are limited to a generic 'declaration of intent'.

³ European Commission (2011), "Innovation Union Scoreboard 2010".

⁴ The two-step process for researcher careers is: (1) a three year fixed-term contract (type A contract) – with the possibility of a two-year extension, awarded via an open selection process (which must be advertised on EURAXESS Jobs), the researcher can participate in calls for a type B contract (three year fixed term, not renewable), under a public competitive process (also advertised on EURAXESS Jobs). During this triennium, the researcher can participate in a national evaluation aimed at obtaining a *habilitation* (the highest academic qualification). If the researcher is successful, the university can enrol him/her in a permanent position. A similar procedure is expected to be introduced in state-run Research Centres (e.g. CNR). Nevertheless, one year after the approval of the Law, the universities had not yet launched the procedure, possibly due to budget constraints and other procedures being still underway (i.e. approval of university statutes, which is also required by the law).

Measure	Description
Law 238/2010: Tax incentives for the return of workers to Italy (2010)	The Law offers fiscal incentives to EU citizens who are holders of a university degree or an advanced tertiary degree. The beneficiaries need to have a work experience of at least twenty four months working out of Italy or out of their country of origin.
National Agency for the Evaluation of Universities and Research Institutes (ANVUR) (since 2012)	ANVUR, which became operational only in 2012 is aimed at guaranteeing and evaluating the quality of the academic staff and educational training for all higher education institutions in Italy. In addition, the Agency defines the national R&D targets, (i.e. 1.53 % of the national GDP by 2020 R&D ⁵), even though this is not specifically in its mandate.
National University Science Degree Plan (2010-12)	The National University Science Degree Plan was adopted by the Ministry of Education, University and Research. It aims to increase the number of enrolments in scientific disciplines at university level through an improved approach to teaching. The National Plan is the successor of the University Science Degrees project that started in 2004.
Resolution of 6th October 2009 (2009)	In the context of the European Partnership for Researchers, the Italian Parliament adopted a Resolution aimed at improving researchers' employment and working conditions. Law 240/2010 is partly compliant to the objectives set out in the Resolution.

Source: Deloitte

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2007, the percentage of women grade A academic staff was 18.5% in Italy compared with 15.9% among the Innovation Union reference group and an EU average of 18.7%⁶.

At policy level, there is only a Memorandum of Understanding on gender equality in the research profession between the Ministry of Education, Universities and Research and the Ministry for Equal Opportunities. The latter has also actively participated in two EU-funded projects promoting gender equality.

Table 3: Measures promoting equal representation of genders

Measure	Description
Practising Gender Equality in Science – PRA.G.E.S (2008-09)	The PRA.G.E.S project collected and described strategies which had been implemented for promoting the representation of women in decision-making bodies in Italian public institutions. Experiences, policies and good practices in all OECD countries were collected, classified and made accessible to decision-makers and other relevant stakeholders.
Women's careers hitting the target: gender management in scientific and technological research – WHIST (2009-11)	The WHIST project addressed gender diversity on the management boards of organisations conducting scientific and technological research (STR). In the framework of this project, experiences, policies and good practices concerning gender equality in the research sector were collected in different EU and non-EU countries. The project highlighted key problem areas to be tackled for achieving gender diversity.

Source: Deloitte

In the framework of the European Structural Funds, local administrations participate in so-called 'Twinning Actions' (2007-13)⁷ related to gender equality. In addition, Italian regional authorities have implemented specific measures to support female students' participation in scientific programmes in Universities (mostly at bachelor level) and to support women's careers through scientific training schemes.

Quotas to ensure a representative gender balance

In Italy, only a few universities indicate that they have quotas in the composition of their internal boards. However, the new Law 240/2012 calls for a representative gender balance in the 'Board of trustees' of research institutions.

Maternity leave

Researchers may be entitled to maternity leave, depending on the type of contract with the host institution. Maternity leave is generally provided in temporary contracts in accordance with specific conditions defined by

⁵ European Commission (2011), "Innovation Union Competitiveness Report 2011".

⁶ See Figure 1 "Key indicators – Italy".

⁷ Under the Education, Audiovisual and Culture Agency Executive Agency (EACEA) "Europe for Citizens" programme.

national laws and regulations. Since 2011, the Government Act, which sets the annual amount of financial resources allocated to the State owned universities, also defines a specific budget of EUR 3.5 million for guaranteeing the salary of post doc women researchers who interrupt their contract during maternity leave. Research institutions enjoy the right autonomously to provide additional benefits to women researchers.

4. Open, transparent and merit-based recruitment

Recruitment system

Recruitment of researchers is neither open nor transparent despite the fact that law 240/2010 promotes an open and transparent recruitment system. A low level of integrity on the part of the members of the selection committees and entrenched recruitment policies impede the transparency of the recruitment process. In Italy, it is common practice for universities to override merit criteria and favour the selection of internal candidates.

Open recruitment in institutions

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

Table 4: 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 Law n. 240/2010 states that all positions should be made publicly available in the national and EU websites. Already before the approval of this law, some Italian universities and research institutions published their vacancies on the EURAXESS Jobs section on a voluntary basis.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	Yes	The Law n. 240/2010 states that all positions should be made publicly available in the national and EU websites. Other positions are published on the EURAXESS Jobs section by all research institutions on a voluntary basis.
– publish job vacancies in English	Yes	The Law n. 240/2010 states that all positions should be made publicly available in the national and EU websites.
– systematically establish selection panels	Yes	Institutions have policies to systematically establish selection panels.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Partly	Usually, the number of the panel members is defined by the law. Inclusion of foreign experts is 'permitted' under the new law 240/2010. Gender balance is not mentioned in the law, although individual institutions may include relevant rules on an autonomous basis.
– publish the composition of a selection panel (obliging the recruiting institution)	Yes	Institutions must (by law) publish the composition of the selection panels.
– publish the selection criteria together with job advert	Partly	The selection criteria are published together with the job advert; however they are usually very generic.
– regulate a minimum time period between vacancy publication and the deadline for applying	No	Some institutions have adopted on an autonomous and voluntary basis the 60 days rule defined by the 'Charter & Code'.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	No	The burden of proof is placed on the applicant who has to prove, by a redress procedure, that the procedure was neither open nor transparent
– offer applicants the right to receive adequate feedback	Yes	All relevant documents are accessible to the applicants, on request
– offer applicants the right to appeal	Yes	Institutions offer applicants the right to appeal.

Source: Deloitte

EURAXESS Services Network

In 2011, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 10 in Italy compared with 8 among the Innovation Union reference group and an EU average of 24⁸.

Only few institutions publish regularly all their research posts while most institutions never do so. Nevertheless, the relevant obligations set forward by the Law 240/2010 are expected to improve the current situation.

EURAXESS Italy provides information on entry conditions, transfer of social security and pension contributions, accommodation and administrative assistance. However, it does not include concrete and detailed information covering all aspects of researchers' professional and private life.

Research grants are regularly posted on the EURAXESS Jobs portal. According to law 240/2010, all (fixed-term) positions must be published on national and EU websites.

5. Education and training

Measures to attract and train people to become researchers

The Italian Government has implemented a set of initiatives aimed at increasing students' interest in (natural) science and technology with the ultimate aim of attracting them to become researchers.

For instance, the annual Week of Scientific Culture and the organisation of similar events by Italian institutions during the European Union's 'Researchers' Night' aim to make young people more familiar with and attract them to science. Additionally, most Italian Universities and research centres meet regularly with primary and secondary education authorities to promote the research profession.

The National Plan for University Science Degrees introduced an improved approach to teaching to increase of the number of enrolments in scientific disciplines at university level. As a result, the number of enrolments in science and technology-related disciplines has increased in recent years by approximately 20% on average (taking the year 2008 as baseline).

Doctoral graduates by gender

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

Table 5: Doctoral graduates by gender

Indicator	Italy	EU average (2008)
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (total) (2008)	1.6	1.6
Female Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2008)	1.6	1.5
Male Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2008)	1.5	1.7

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

In Italy, doctoral candidates are not always supported by fellowships. In 2008, approximately 60% of some 37 000 PhD students received a fellowship. Until recently, the Government promoted various funding schemes on specific or general topics and subject to specific conditions.

As a result of the current economic and financial crisis and accompanying austerity measures, the Ministry of Education, University and Research has put many funding schemes on hold. Consequently, some Italian Universities have introduced internal rules to co-fund doctoral studies with financial resources based on their research grants.

⁸ See Figure 1 "Key indicators – Italy".

Measures to increase the quality of doctoral training

The forthcoming Regulation on Doctoral Studies, issued as an *ad hoc* Decree, under the provisions of Law 240/2010, will propose measures aimed at increasing the quality of doctoral training.

Doctoral Programmes will be assessed and evaluated at national level by the Ministry of Education, University and Research, on the basis of an evaluation performed by the National Agency for the Evaluation of Universities and Research Institutes (ANVUR).

Skills agenda for researchers

The Italian Government has not adopted a Skills' Agenda to improve researchers' employment skills and competencies. However, higher education institutions are increasingly providing a variety of training and several skills portfolios on an autonomous basis.

6. Working conditions

Measures to improve researchers' funding opportunities

The ratio of R&D investment to GDP is lower than the average in other countries. The Italian government has introduced fiscal incentives for the private sector to invest in R&D development. A private company is able to fund doctoral study only on the basis of an agreement with a university..

Remuneration

Under Law 240/2010, researchers' pay no longer increases automatically with age, but is result-related: young researchers receive regular pay increases irrespective of age, but in general the remuneration of active researchers will increase based on their effectiveness and research activity.

Researchers' Statute

Researchers (including doctoral candidates not receiving fellowships/stipends/grants) are eligible for social security coverage. Law 240/2010 on the General Reform of University Education 'discourages' exploitation of researchers and doctoral candidates. Once employed under a fixed-term contract, researchers are supposed to receive a fixed salary.

Italian Universities and state-run research centres (e.g. the National Research Council - CNR) statutorily enjoy a high degree of autonomy in allowing students and researchers to participate in decision-making processes.

Law 240/2010 on the General Reform of University Education includes a fixed 15% quota for student representation on the decision-making boards of Italian universities. However, the fixed quota does not explicitly cover 'research fellows'; they are generally included in the quota reserved for the 'academic staff' on the Academic Senates.

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

The 'Charter & Code' principles are referred to in several Articles of Law 240/2010. However, they are merely promoted based on an 'encouragement to comply' rather than a mandatory obligation.

Autonomy of institutions

Italian universities and research centres are autonomous in developing the different profiles of their academic staff. However, under Law 240/2010, institutions are free to develop specific profiles for their staff – ranging from 100% teaching to 100% research, with all possible 'mixtures' in between. However, institutions need to take into account all the restrictions established by the Law, i.e. minimum number of annual teaching hours for professors and maximum amount of annual teaching hours for 'research fellows/ lecturers').

Career development

The Law 240/2010 on the General Reform of University Education foresees a two-step process for researcher careers: (1) a three year fixed-term contract (type A contract) – with the possibility of a two-year extension, awarded via an open selection process, the researcher can participate in calls for a type B contract (three year fixed term, not renewable), under a public competitive process. During this triennium, the researcher can

participate in a national evaluation aimed at obtaining a *habilitation* (the highest academic qualification). If the researcher is successful, the university has to enrol him/her in a permanent position.

A similar procedure is expected to be introduced in state-run Research Centres (e.g. CNR). Nevertheless, one year after the approval of the Law, the universities had not yet launched the procedure, possibly due to budget constraints and other procedures being still underway (i.e. approval of university statutes, which is also required by the law).

Shift from core to project-based funding

In Italy, the shift from core to project-based research funding is still modest. Most researchers have the status of public servants and their salary is covered by core funding. During the last three years, the State 'core' funding could not increase (by law) or decrease more than 5% with respect to the previous year (according to the law). Overall, core funding guarantees the salaries of the staff (researchers, technicians and administrators), while project-based funding covers research activities and infrastructures.

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

Researchers under publicly funded fellowships/grants or under employment contracts are entitled to sickness benefits, but do not have an automatic right to maternity leave.

Old-age benefits are only foreseen for employees (permanent and fixed term contracts), in the same way that pension contributions⁹ are collected in a separate track (*gestione separata*) of the National Social Security Institute.

7. Collaboration between academia and industry

Law 240/2010 on the General Reform of University Education establishes a legal framework for regulating partnerships between academia and industry. A vast majority of universities and doctoral schools offer doctoral programmes between academia and industry on the basis of a memorandum of understanding. Thanks to their autonomy, Italian universities are free to establish bilateral relations with the business sector.

Moreover, doctoral students are free to sign a high level apprenticeship contract (*contratto di alto apprendistato*) with an enterprise. Enterprises and other (private) employers can recruit a PhD student (under the age of 29) under a fixed-term contract subsidised by the local (regional) governments.

Decree 297/1999 allocates financial contributions to SMEs where a researcher from a university or a (public) research centre is employed by the company for a period of at most four years, renewable only once (eight years in total).

8. Mobility and international attractiveness

In 2007, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 1.8% in Italy compared with 2.8% among the Innovation Union reference group and an EU average of 7.3%.¹⁰ In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 4.1% in Italy compared with 5.1% among the Innovation Union reference group and an EU average of 19.4%.¹¹

Nevertheless, there are few Italian universities attracting a higher number of non-Italian students and/or doctoral candidates (even up to 30%), thanks to the development of training activities in English and so,.

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

The Rita Levi Montalcini Programme is a national fellowship programme managed by the Ministry for Education, University and Research. It promotes the internationalisation of Italian Universities by enabling early-stage researchers working abroad to carry out research projects at an Italian University of their choice. Its purpose is to recruit outstanding post-doctorates working abroad and give them the opportunity to submit

⁹ More information on the pension schemes can be found on the EURAXESS Italy Portal.

¹⁰ See Figure 1 "Key indicators – Italy".

¹¹ Ibid.

a proposal for a temporary position in conjunction with a proposal for a research grant. The total budget of the programme arrives at EUR 6 million.

Inward mobility (funding)

The Rectors' Conference and the Ministry of Education, Universities and Research have held specific meetings in order to eliminate barriers to mobility (e.g. obstacles in the application of the Visa procedures for Third country researchers, identified in the transposition of the Visa Directive 71/2005). At the same time, awareness-raising actions have been undertaken to improve implementation of all relevant researchers' (and students') Directives by the Ministries concerned (Universities, Internal Affairs, Foreign Affairs). A document including all relevant information to be distributed to the IT Embassies abroad and to IT immigration authorities in Italy remains to be signed by the concerned Ministers.

Outbound mobility

The Italian Government has not put in place concrete measures to encourage young researchers to spend some time as a researcher in another country. However, the activation of the Doctoral Training Courses in IT since 1985, has opened up the opportunity for doctoral candidates to spend some time working abroad. Since then, approximately 20% of doctoral candidates have benefited from this mobility support.

A few universities have also adopted, on a voluntary basis, an internal regulation which requires from doctoral students at least six months staying abroad before they set their final exam to obtain their the doctoral degree.

Promotion of 'dual careers'

The Italian Government has not designed a national policy to support researchers' dual careers, but some general measures are being implemented, on a voluntary basis, by a few universities (e.g. reserved places at kindergartens for researchers' couples' children). Typically, higher education institutions and public research centres do not promote researchers' dual careers.

Portability of national grants

In Italy, publicly funded grants or fellowships are not portable per se but they can potentially be portable on a case by case basis.

Access to cross-border grants

In Italy, national grants or fellowships are open to graduate students of all nationalities. However, all non-national beneficiaries, they are obliged to conduct part of their project in Italy, even though they are not necessarily requested to become Italian residents.

Measures encouraging inter-sectoral mobility

Decree 297/1999 allocates subsidies to SMEs where researchers from Universities and (public) research centres are seconded to them for a period of four years at most, renewable only once (so eight years maximum). However, this possibility has been rarely experienced; in total, a few dozens of inter-sectoral mobility cases have been implemented since the adoption of the decree.

The forthcoming Regulation on Doctoral Studies explicitly promotes industry-academia doctoral programmes.